MADRAS Information

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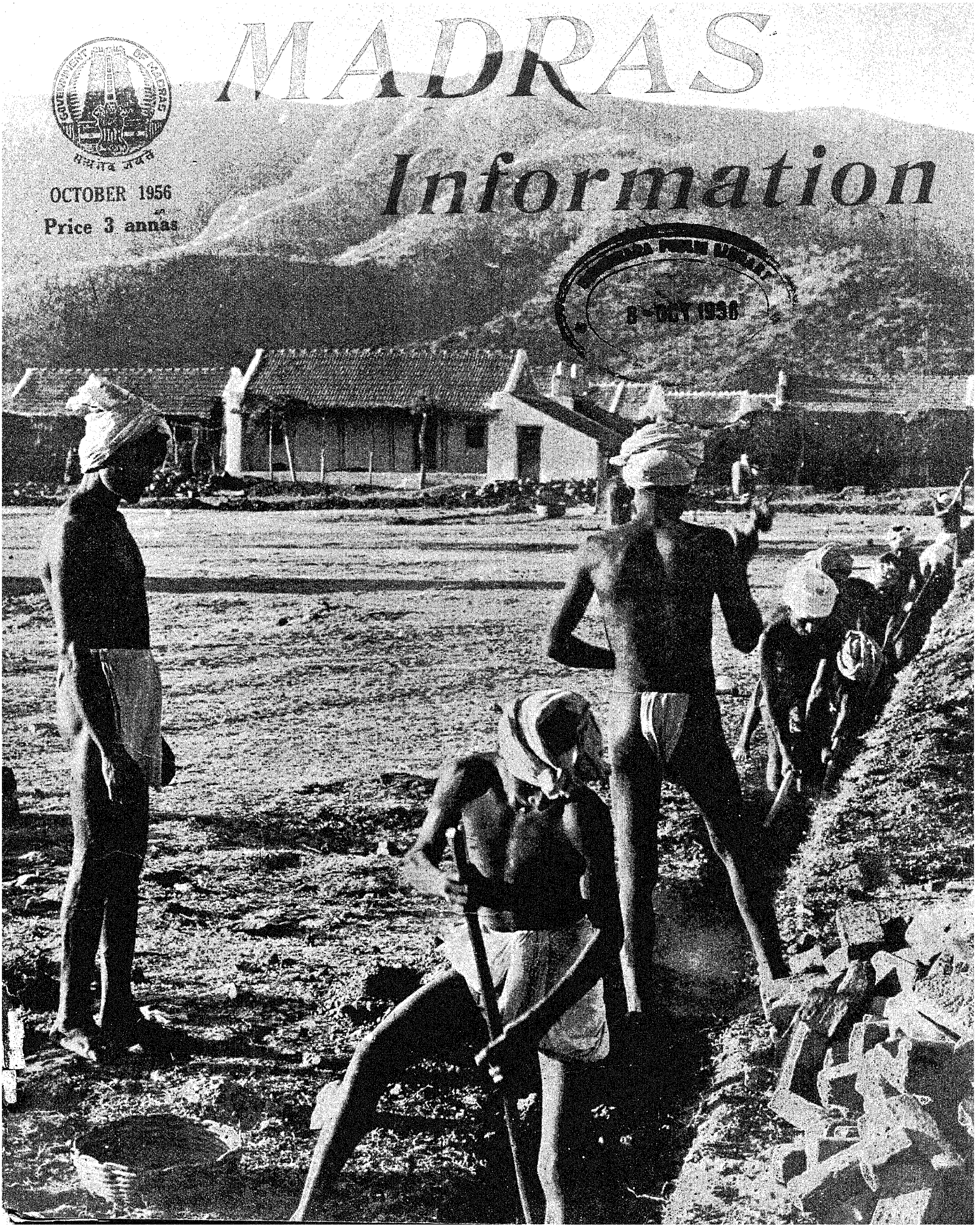

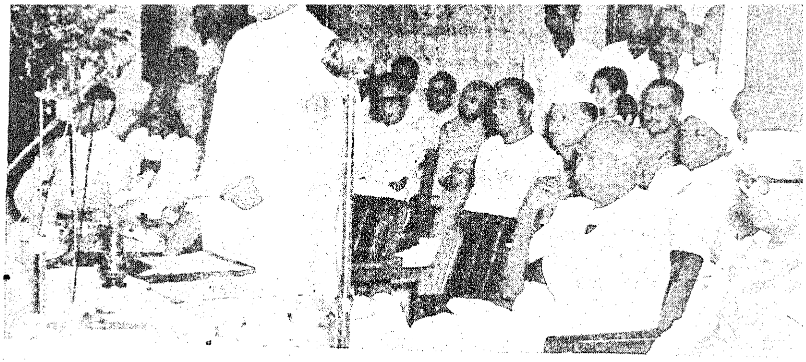

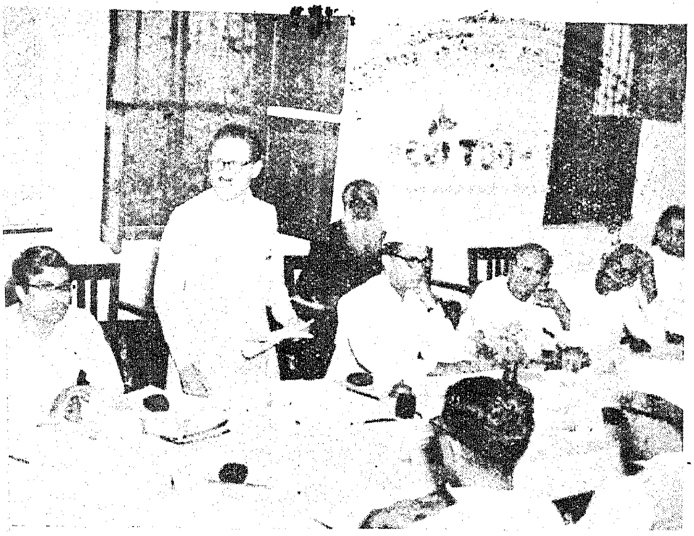

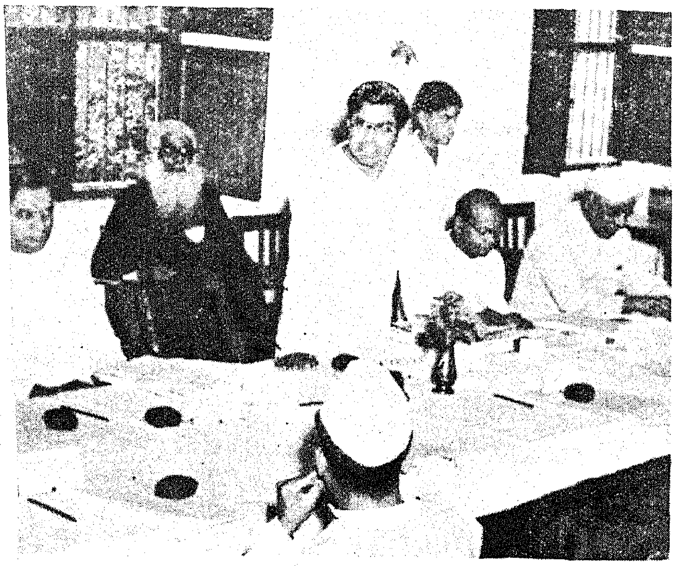

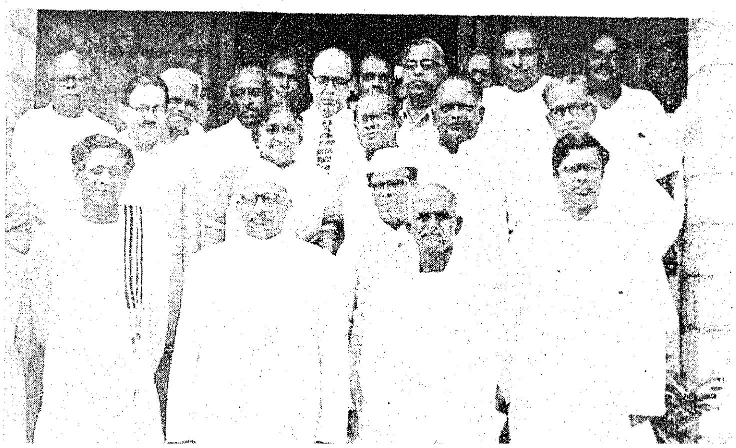

Educational Conference for the Southern Region was held at Coimbatore in the last week of August. Shri Sri Prakasa, Governor of Madras, inaugurated the Conference and many eminent educationists participated in it.

[Library stamp]

Madras Information

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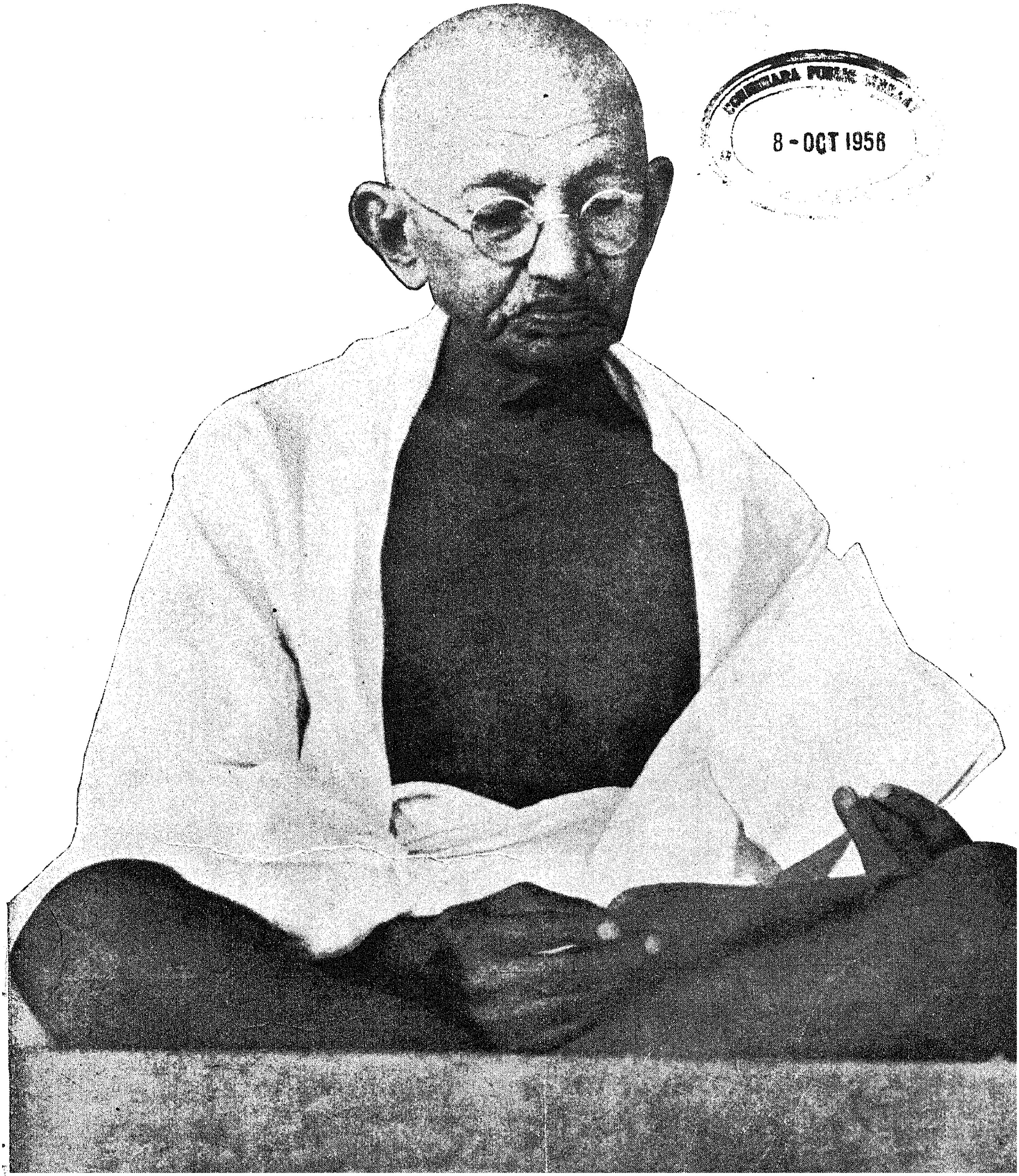
CONTENTS:

		PAGE
1.	State of Basic Education in 1956—Sri N. D. Sundaravadivelu, Director of Public Instruction.	3
2.	Salient Features of a Silent National Revolution	7
3.	Poondi Irrigation Research Station—Sri D. P. Jog	9
4.	The Ketty Valley Transformation—Sri N. Murugesa Mudaliar	11
5.	Power Projects in Madras State	13
6.	Dolls for the Dear Ones	16
7.	Animal Husbandry in the Second Five-Year Plan—Dr. D. Pattabhiraman, Director of Animal Husbandry.	17
8.	Training in Poultry Farming—Sri T. Purushotham, M.L.C.	20
9.	Madras Museum—Zoological Gallery—Sri S. T. Satyamurti, M.A., D.SC., F.Z.S. ..	22
10.	Conditioning Reflexes for Development— Sri J. M. Lobo Prabhu, I.C.S. ..	24
11.	Recommendations of the Finance Commission	31

Cover Picture: Monuments in many forms and of various types have been built for Mahatma, but the most befitting one seems to be the National Extension Scheme inaugurated on Gandhi Jayanti Day four years ago. This memorial has since grown and spread in volume and dimension and by the end of the Second Five-Year Plan it is proposed that the entire country be brought under the rural reconstruction scheme. On this Gandhi Jayanti Day, let us pay homage to the Great Soul by rededicating ourselves to the noble task that was dear to him—the establishment of Grama Swaraj.

"Let us be worthy of him—Let us always be so"



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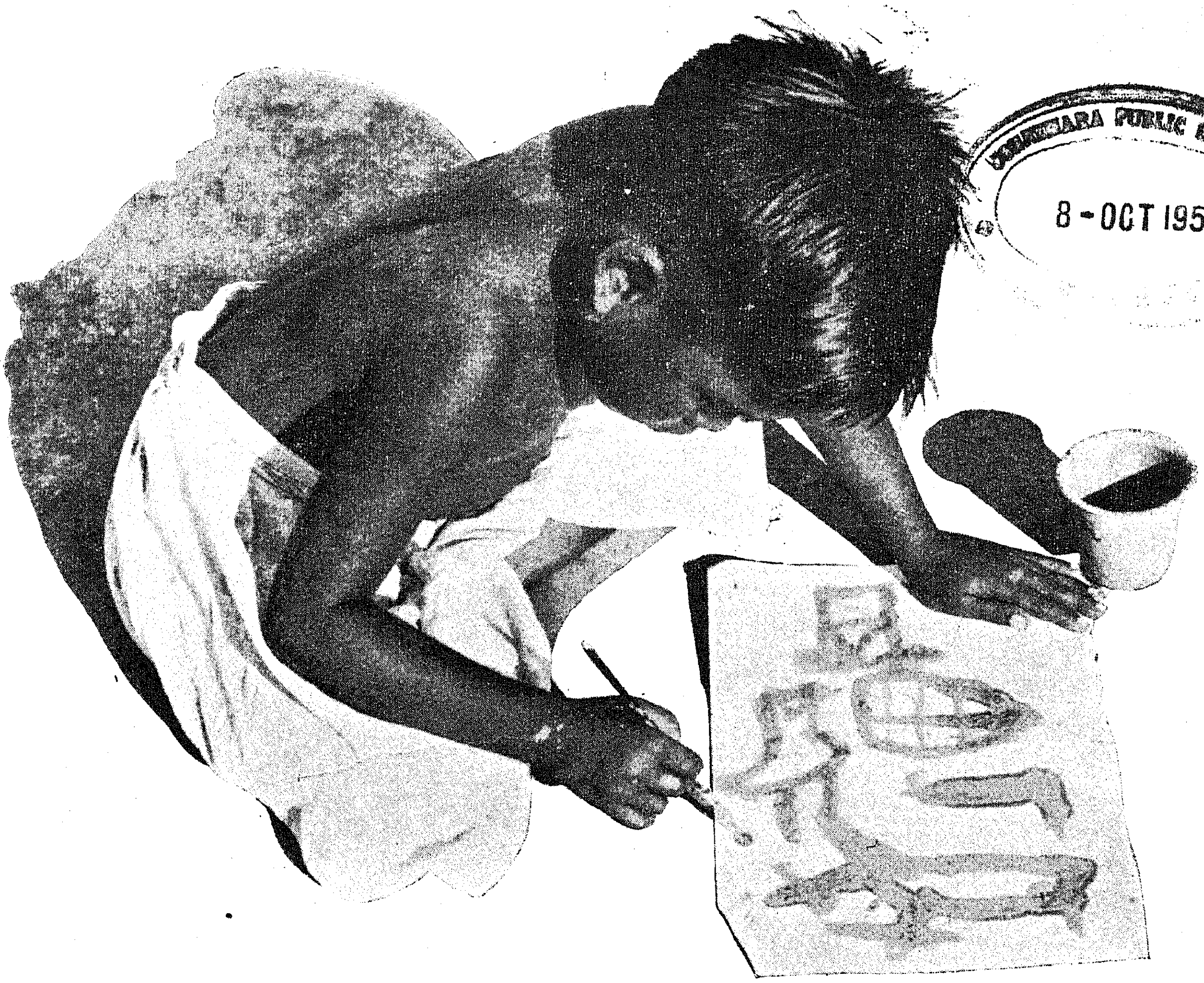


8-OCT 1956

State of Basic Education in 1956

This is the eleventh year of continuous work in the development of Basic Education in the Madras State. There was a large increase in the number of institutions over that of the previous year. The number of Basic Training schools increased by 92 per cent and Basic schools by 120 per cent. The number of Post-Basic schools has increased from 2 to 4. There was an extensive programme for retraining Elementary and Secondary Grade teachers.

One thousand and three hundred Elementary schools were converted into Basic schools during this year. The number of Basic schools in the last three years is given below :—

1953–54.	1954–55.	1955–56.
905	1,075	2,375

Government sanctioned a sum of Rs. 13 lakhs for provision of craft equipment for these 1,300 Elementary schools converted into Basic schools. For the first time, the unutilized portion of this provision has been ordered to be carried over for the next financial year.

SRI N. D. SUNDARAVADIVELU.

A sum of Rs. 19,230 has been disbursed as grants to four aided Basic schools for construction of buildings. A sum of Rs. 2,500 was given as subsidy to a Board Basic school for the same purpose.

The number of pre-Basic schools remained 32. No new pre-Basic schools attached to Basic schools were opened during the year, nor in the previous two years.

Two new post-Basic schools were opened under private management during this year, one at Gandhigram in Madurai district, and the other at Perur in the Malabar district. The number of post-Basic schools in relation to the previous years is shown below :—

1953–54.	1954–55.	1955–56.
1	2	4

The number of Basic Training schools rose to 81 during the year. The number of Basic Training schools in the last three years is given below :—

1953–54.	1954–55.	1955–56.
42	47	81

The increase in the number of Basic Training schools in 1955–56 was as detailed below :—

Basic Training schools newly opened.	18 (14 Government and 4 aided).
Training schools converted into Basic Training schools.	17 (11 Government and 6 aided).

One aided Basic Training school was closed from the beginning of the school year. Eight additional sections were opened in the existing Basic Training schools.

Government sanctioned during the year the purchase of a pair of bulls for each of twelve Government Basic Training schools at a cost ranging from Rs. 400 to Rs. 500 per pair.

Coir-making as Subsidiary Craft

Introduction of coir-making as a subsidiary craft in the year 1956–57 in four Government Basic Training schools in the Malabar district was sanctioned by Government.

Buildings for Basic Training Schools

Three new buildings of the type-design have been constructed for Government Basic Training schools at Orathanad, Musiri and Anakkara.

Two buildings for aided Basic Training schools are under construction with Government aid. One is for the Basic Training school at Keelamoongiladi and the other for the Mission Aided Basic Training school at Pudupalayam both in South Arcot district. Government have approved schemes for the construction of buildings for aided Basic Training schools at Porto Novo (South Aroct) and Kinnikambla (South Kanara) at estimated costs of Rs. 71,425 and Rs. 52,000, respectively.

Stipends for Trainees

Stipends at the rate of Rs. 18 per pupil per month continued to be given to those of the Junior Basic Grade as well as the Senior Basic Grade.

Inspection and Control

Inspection and control of the Basic Training schools continued to be vested in the two gazetted Basic Education Officers. Consequent on the large increase in the number of Basic Training schools and Basic schools, the volume of work increased considerably all on a sudden. The burden has been shifted partly to the District Educational Officers by entrusting them, for the time being, with certain administrative routines such as sanction of stipends.

Retraining of District Educational Officers and Inspectresses of Girls' Schools in Basic Education.

Basic Education being the accepted pattern of National Education, it was felt that every officers in the Department should be retrained to fit in with the new development. As a first step, a scheme of retraining all District Educational Officers and Inspectresses had been undertaken with the approval of Government and the Hindustani Talimi Sangh. The salient features of the Scheme are—

(1) A preparatory study by these officers of *syllabi* and Basic Education literature according to a list provided.

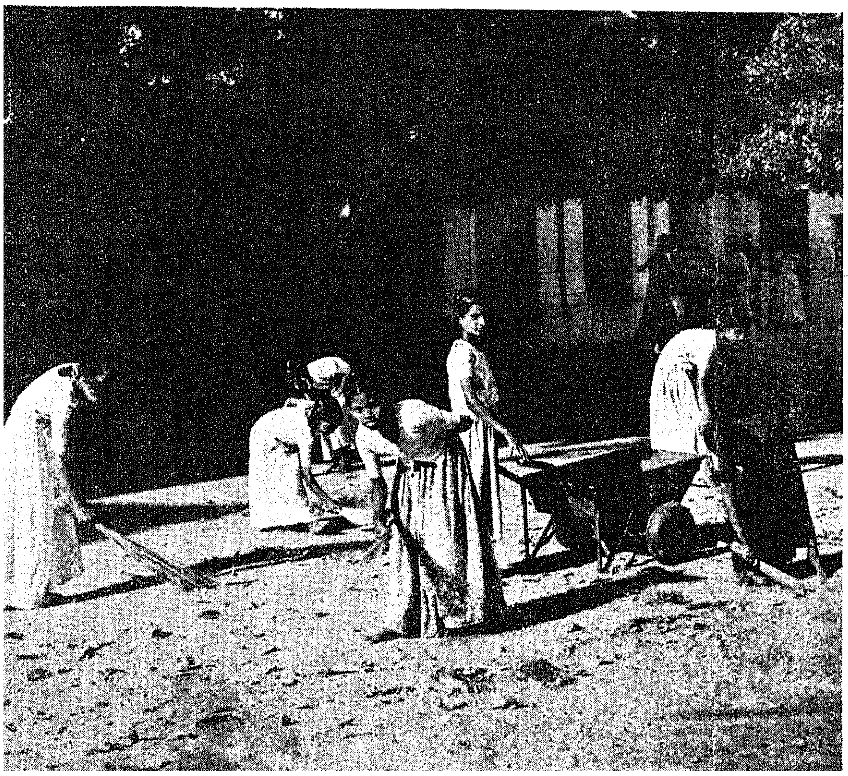
(2) The preparatory study to be followed by a course of continuous regular training for two weeks in a suitable Basic Training centre.

(3) Visits to Basic schools and Basic Training schools for first-hand study and observation of the methods, organization and administration of Basic Education.

(4) A further training course for two or three weeks in a suitable centre.

(5) Visit to Sevagram for observation and study for a period of one week or ten days.

The first stage of two weeks' training was conducted at the Government Basic Training School, Tirur, Chingleput district, from 2nd April 1956 to 16th April 1956. Seventeen officers underwent the training. Sri K. Arunachalam, formerly Principal of the Teachers' Training College, Periyanaickenpalayam, conducted the training, assisted by three gazetted officers of the Department who are both basic trained and sufficiently experienced in the field. I am happy to place on record that these officers took to this retraining with zeal and earnestness and have given a good account of themselves. I am confident they will evince the same enthusiasm in furthering the growth of Basic Education.



DOING IS LEARNING

Pre-Basic Training Schools

The Kasturbagram Pre-Basic Training School, Kasturbagram, Coimbatore district and the Pre-Basic Training Section attached to the Lady Willingdon Training College continued to

train candidates for the Pre-Basic T.S.L.C. Examination.

Retraining of Teachers.

Graduate teachers.—One hundred and fifteen teachers were retrained in the five months' course of re-training during the year, as against 72 in 1954–55. The Gandhi Basic Training School, Periya-naickenpalayam, and the C.D.S.M. Basic Training School, Batlagundu, conducted the retraining courses. In the Basic Training School, Periya-naickenpalayam, two batches were retrained; the first batch of 38 teachers from 23rd June to 22nd November 1955 and the second batch of 40 from 23rd November 1955 to 22nd April 1956. In the Basic Training School, Batlagundu, one batch of 37 teachers, was retrained from 18th July to 17th December 1955. The graduate teachers comprised Deputy Inspectors of Schools and School Assistants from Government institutions and graduate teachers from aided Training schools.

Elementary and Secondary Grade Teachers.

In order to convert, during the year, 1,300 Elementary schools into Basic schools, a large programme of retraining of teachers in a three months' course in Basic Training schools was launched. About 5,500 teachers were thus retrained. The rate of retraining during this year has broken all previous records, as nearly ten times the number retrained in the previous year have undergone retraining this year.

Craft Equipment Stores.

Three new Craft Equipment Stores were opened during the year, one attached to the Government Basic Training School, Malappuram (Malabar), the second attached to the office of the Deputy Inspector of Schools, Koilpatti (Tirunelveli), and the third to the Lady Willingdon Training College, Madras. A sum of Rs. 5,000 was sanctioned to each store for the provision of craft equipment, to be supplied to basic schools.

The number of Craft Equipment Stores in 1955–56 was 29.

Craft Production.

The main craft in Basic Training schools continued to be spinning and weaving, agriculture and gardening being a subsidiary craft. In Basic schools, spinning is the main craft, and gardening is the subsidiary craft.

Earnings in craft production for the year 1954–55 are given below:—

Basic Schools—

Number of basic schools.	*Pupils.*	*Net earnings.*
		RS. A. P.
1,075	131,812	24,727 11 9

Basic Training Schools—

Number of Basic Training schools.	*Pupils.*		*Earnings.*
			RS. A. P.
47	4,732	Cotton Craft.	48,100 10 6
		Agriculture.	9,329 8 8

Self-Sufficiency.

Thirty-two Basic Training schools attained more than 50 per cent self-sufficiency.

Disposal of Craft Produce.

The craft equipment and initial raw materials are supplied free by the Department to all Basic schools. The schools deposit either the entire finished produce or the value of such products as may be sold, together with the unsold craft produce, into the Government Craft Equipment Stores. The required quantity of raw materials is issued from the same store in exchange for part of the craft produce delivered at the store. The value of the balance is credited to the funds of the Government which supplied the original equipment and raw material. The disposal of craft produce relating to cotton craft has been presenting a problem of disposal, unlike the agricultural produce.

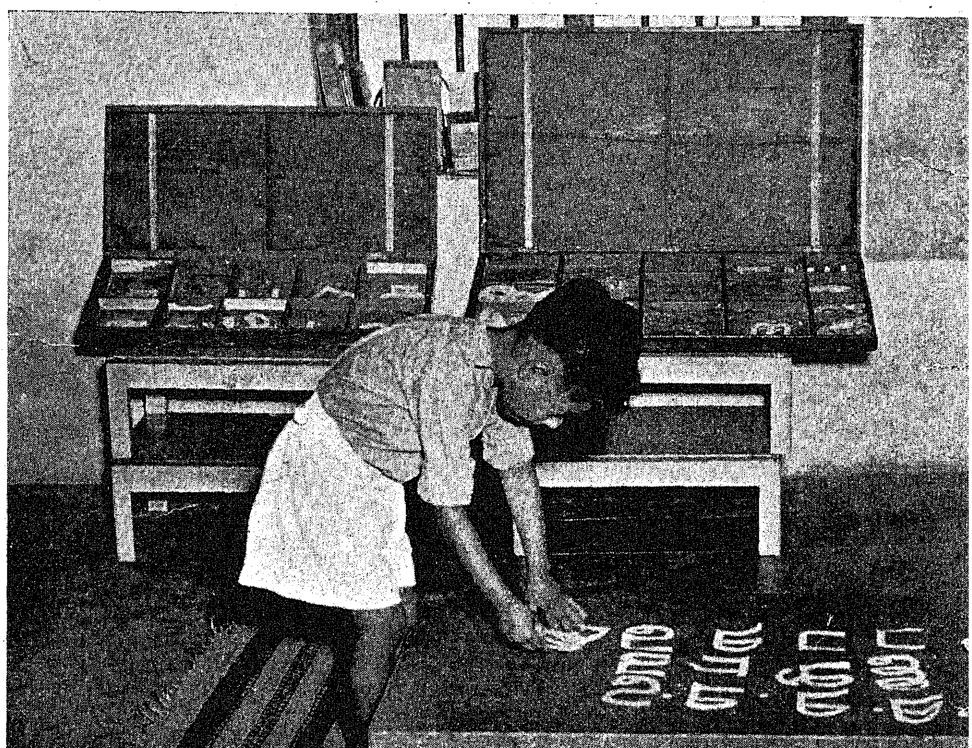
The Rural Welfare Department of the Government has agreed to take over our products and dispose them of and credit the amount realised to the State funds.

Literature for Basic Schools.

Fifty reading books in Tamil for Grades II to V of Basic schools were prepared by the Special Officer appointed for the purpose. The production of these books was on the recommendation of the Ad Hoc Committee on Basic Education. The number of books prepared gradewise is shown below:—

Grade II	10
Grade III	10
Grade IV	14
Grade V	16

A DISCOVERY—EVERYTHING HAS A NAME!



Arrangements for the publication are in progress. A separate booklet explaining the aim and scope of these reading materials will also be published.

Committees and Conferences.

Regional Basic Education Conferences.—The Annual Regional Basic Education Conferences were held in January and February 1956. In the Coimbatore Division, the Regional Conference was held at the Government Basic Training School, Avinashi, for three days in January 1956, and in the Madurai Division, it was held for three days in February 1956 at the Government Basic Training School (Women), Tanjore. They were organised by the Basic Education Officers. The Hon'ble Minister for Education was pleased to inspire and encourage all the workers in the field of Basic Education by his participation in one of them. The Director of Public Instruction attended and took an active part in the discussions of both these conferences. District Educational Officers, Inspectresses of Girls' Schools, Headmasters of Basic Training Schools, Basic Trained Deputy Inspectors of Schools and heads of Post-Basic schools and of select Basic schools attended the conferences. To the Conference held at Tanjore, lecturers in Basic Education from the Lady Willingdon Training College, Madras, the Meston Training College, Royapetta, and the St. Christopher's Training College, Vepery, were also deputed.

These conferences provided opportunities for members of the staff of Basic Training schools and the Inspecting and Administrative Officers of all grades including the Director of Public Instruction to come into contact with each other and understand their common problems and difficulties in the field, review the work done and discuss ways and means for further development.

Quarterly Conferences.

Quarterly conferences of one day's duration for Basic school teachers were also held at Basic Training schools with compact areas around them.

I am glad to state in conclusion that the year under report has been one of unprecedented expansion at all stages and aspects of Basic Education. Now that all the Administrative District Officers of the Education Department in this State are being retained in Basic Education, I hope and trust that the experiences, the intelligence and the wisdom of the many will be available for solving the day-to-day problems of Basic Education and that the spread of Basic Education will receive further impetus. The fact that the eleventh All-India Basic Education Conference is held in this State is not only a proud privilege but also another source of strength and inspiration for the work in the coming years.

ANNEXURE.

Enrolment.

	Junior Basic Schools.	*Senior Basic Schools.*	*Basic Training Schools.*
1949–50 ..	5,813	552	1,213
1950–51 ..	8,134	518	1,973
1951–52 ..	11,332	1,275	2,090
1952–53 ..	20,285	3,171	2,811
1953–54 ..	44,091	10,768	2,895
1954–55 ..	98,710	46,380	3,578
1955–56 ..	205,350	48,863	5,346

Yarn produced (Number of hanks).

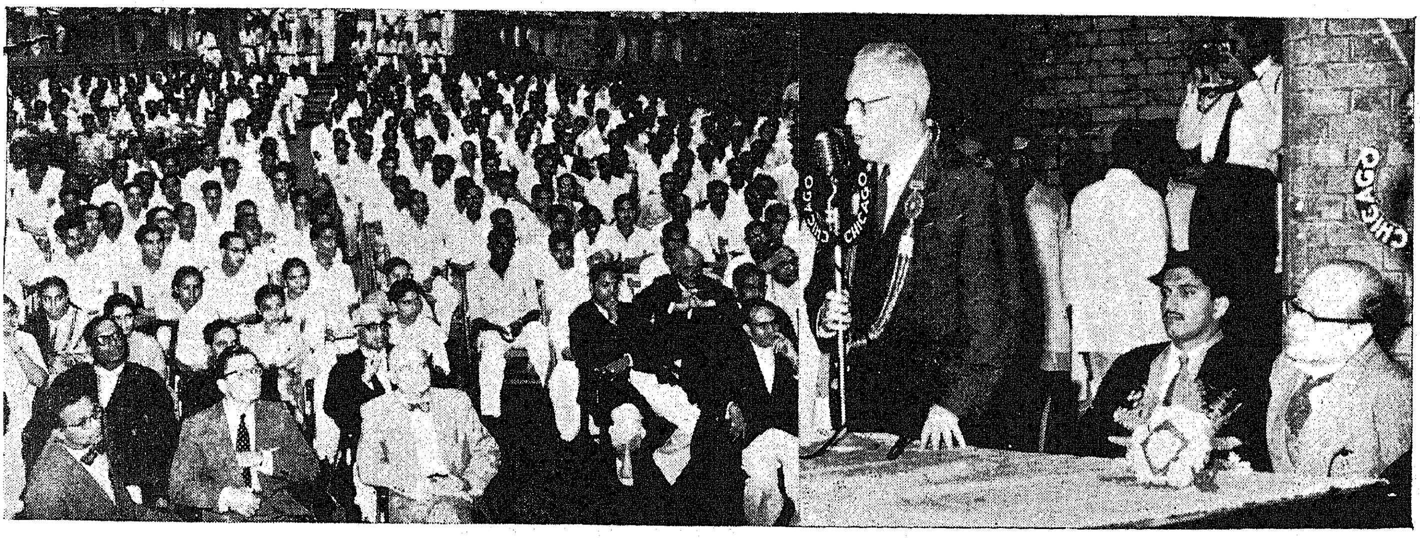
1951–52 ..	399,971	(Composite State).
1952–53 ..	331,587	(Residuary State).
1953–54 ..	508,582	(do.)
1954–55 ..	560,784	(do.)

Square yards of cloth produced.

1951–52 ..	16,370	(Composite State).
1952–53 ..	13,692	(Residuary State).
1953–54 ..	28,274	(do.)
1954–55 ..	37,729	(do.).

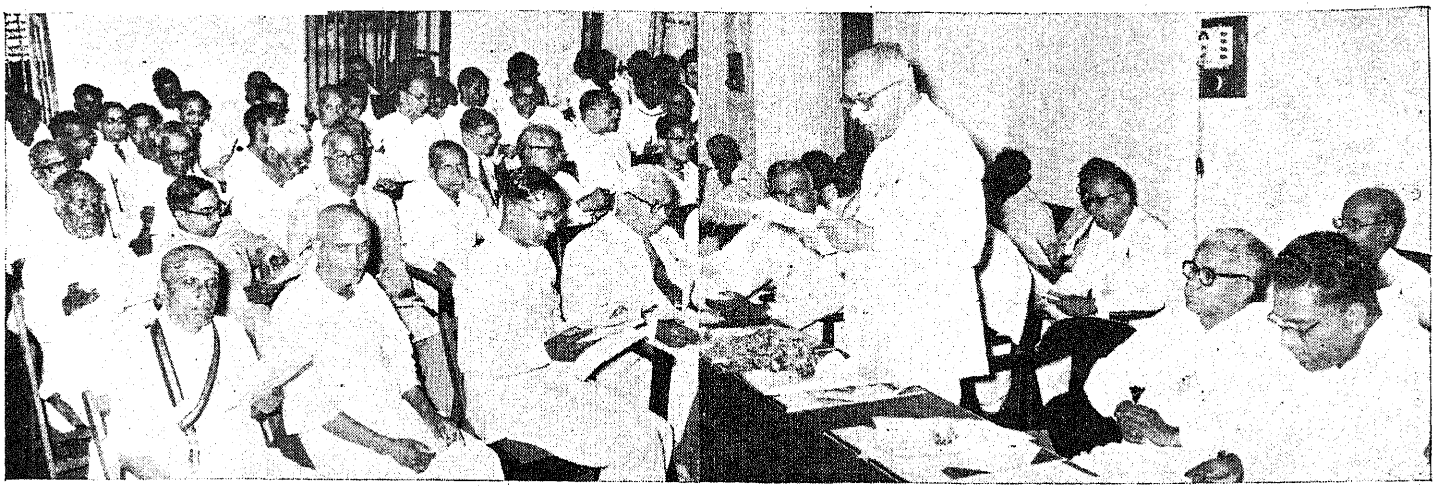
Number of Elementary and Secondary Grade Teachers retrained in Basic Education.

1947 to 1949 ..	438	Composite State.
1950 summer ..	844	
1951 do. ..	655	
1952 do. ..	1,439	
1953 do. ..	720	
1954 summer	596	Residuary State.
1955–56 ..	5,500	



Mr. Justice Earl Warren, Chief Justice, Supreme Court, U.S.A., addressing the students of the Law College, Madras, during his recent visit to the City.

8 - OCT 1956



Sri A. B. Shetty, Minister for Co-operation, inaugurating the Second Conference of the Madras State Co-operative Housing Societies.

Community Development

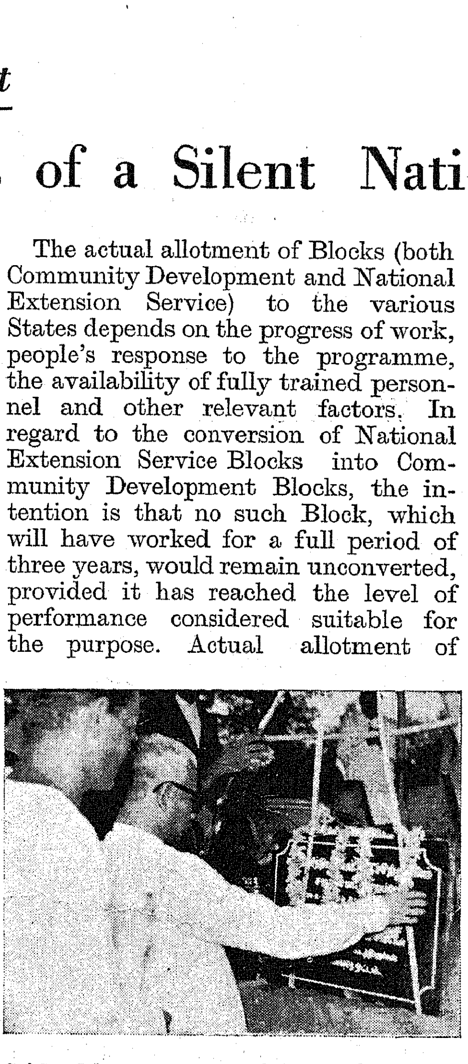
Salient Features of a Silent National Revolution

It has already been decided that the entire country will be covered by the National Extension Service by the end of 1960-61, and Rs. 200 crores have been allocated for the purpose. An overall programme for the entire country was discussed at the Fifth Development Commissioners' Conference at Nainital, and approved by the Central Committee of the Planning Commission. The State Governments' programmes are being drawn up in the light of these decisions and recommendations.

One of the salient features of the overall programme is that not less than 40 per cent of the 3,800 new N.E.S. Blocks to be started during the Second Plan period would be converted into Community Development Blocks of the more intensive type.

So far 1,160 N.E.S. and Community Development Blocks have been allotted and work has started in all of them. They cover 157,347 villages and a population of 88·8 million. In another 266 Blocks which have also been allotted, work will start from October 2, 1956. In the meantime preliminary work, involving expenditure up to to a ceiling of Rs. 10,000 per Block, is being undertaken therein.

The actual allotment of Blocks (both Community Development and National Extension Service) to the various States depends on the progress of work, people's response to the programme, the availability of fully trained personnel and other relevant factors. In regard to the conversion of National Extension Service Blocks into Community Development Blocks, the intention is that no such Block, which will have worked for a full period of three years, would remain unconverted, provided it has reached the level of performance considered suitable for the purpose. Actual allotment of Blocks will continue to be made by the Central Committee.



Sri M. Bhaktavatsalam, Minister for Agriculture, laying the foundation-stone for the N.E.S. Community Hall at Tiruchitrambalam.

Financial Allocations.

As the whole of the country is to be covered by the National Extension Service by the end of 1960-61 and the total allotment made for this programme during the Second Plan period is Rs. 200 crores, the amount to be spent in each of the Blocks has been slightly reduced. The revised estimated expenditure for a period of three years will be Rs. 12 lakhs for a Community Development Block instead of Rs. 15 lakhs and Rs. 4 lakhs for a National Extension Service Block instead of Rs. 4½ lakhs. All N.E.S. and Community Development Blocks started after April, 1956 will work on this revised budgetary pattern.

Provision has also been made for subsidy to private irrigation works. This subsidy will be shared between the Central and State Governments.

In order to keep up the tempo of work in the Community Development Blocks which will have completed their period of operation during the Second Five-Year Plan, a provision of Rs. 30,000 per annum per Block has been made for a period of three years. Of this amount Rs. 5,000 will be spent

on Education and Rs. 25,000 on Local Works.

An 'Ad hoc' provision of Rs. 5 crores has been made for certain special items like model villages, sample surveys, pilot projects, research, publications, etc.

It has also been recommended that there should be a Block Level Extension Officer (Cottage Industries) for each National Extension Service Block. These officers will first be posted in the Community Development Blocks.

Industrial Pilot Projects.

Twelve Investigation Teams are being appointed by the Ministry of Industry and Commerce to carry out a survey of the industrial pilot projects. These teams will assist the States in drawing up long-range programmes for the development of village and small-scale industries in each pilot project. Twenty-five such projects are now functioning in the States.

The All-India Khadi and Village Industries Board has already recommended to the Ministry of Production the appropriation of an amount of Rs. 1 crore for the development of Khadi and village industries in the pilot projects. The specific schemes for starting such industries are now being finalised and will soon be sanctioned by the Board.

It has been generally agreed that a minimum of 40 per cent of the allocations for the various All-India Board for the development of cottage industries should be remarked for starting such industries in Community Development Blocks.

Action Committees have been constituted in 19 of the Pilot Projects and necessary powers have been delegated to Community Development Project Officers (Industries).

Role of Advisory Committees.

Following the Fifth Development Commissioners' Conference at Nainital, more and more attention is being paid to association of non-officials in development works. It is felt that the entire responsibility for planning and execution of the plans may be entrusted to non-officials in the post-intensive stage, and that the official machinery should develop and activise popular institutions during the programme period, so that these institutions might take over the entire responsibility at that stage.

The Project and Block Advisory Committees have a specific role to play in the implementation of the Five-Year Plan. In the Community Development Programme during the post-intensive phase, one of their main functions will be to advice on the formulation and approval of schemes under local works and social education.

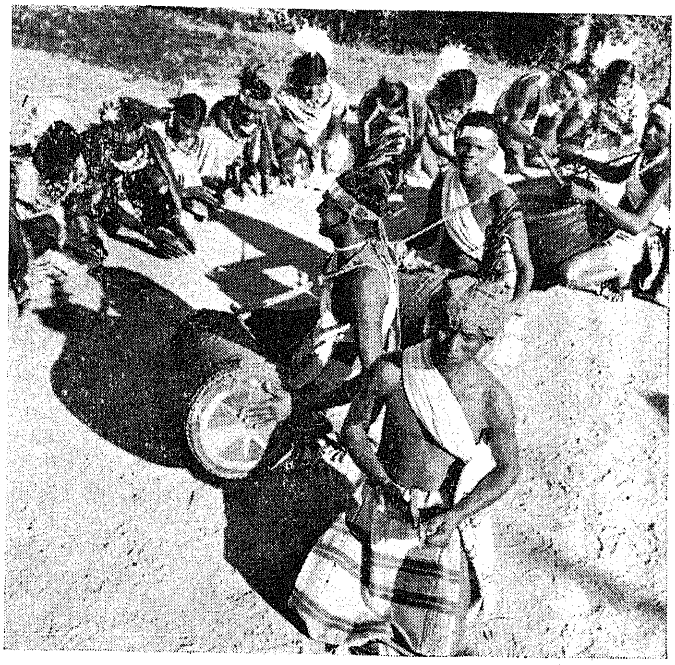
Efforts will be made to develop these committees into self-reliant and motivating institutions of the people in the Blocks, so that they can fit into local self-government pattern of the future.

Agriculture and Animal Husbandry.

Cultivators in the Community Development and National Extension Service Blocks appear to be taking to improved methods of agriculture and animal husbandry with enthusiasm. Up to the end of March, 1956, over 9·330 million maunds of fertilizers and 4·519 million maunds of improved seeds have been distributed. 1·224 million agricultural demonstrations have been held. The area which has been brought under food crops is 160,000 acres and under vegetables 376,000 acres.

2,548 key village centres have been started and 11,314 pedigree animals and 244,000 pedigree birds have also been supplied. The area reclaimed comes to about 1·092 million acres.

Tribal Welfare



While allocation for development of tribes under the First Plan was Rs. 32 crores (Rs. 7 crores for ex-criminal tribes), under the Second Plan Rs. 51 crores would be spent on tribal welfare. This includes an allocation of Rs. 4 crores for ex-criminal tribes.

Welfare programmes are broadly educational, health and economic. The range extends from primary schools, dispensaries, scholarships for higher education to training in scientific agriculture, cattle breeding, poultry farming, organising of multi-purpose co-operative societies, relief to indebted persons reclamation of waste lands, etc.

In their implementation, therefore, the confidence of the tribal people is of the highest importance and the programmes have to be based on respect and understanding of their culture and traditions and an appreciation of the special social, psychological and economic problems with which they are faced. Tribal people have to be assisted largely through their own institutions and for this the anthropologist, the administrator, the specialist and the social worker have to work together as a team. This has been the basic approach of the Government of India.

0 -OCT 1956

Power Projects in Madras State

Six Lakhs K.W. by the end of the Second Plan

The First Five-Year Plan for the Madras State envisaged the construction of a new power-house at Moyar and extensions to the existing stations at Pykara, Papanasam, Madurai and Madras. The installed generating capacity increased by nearly 65 per cent from 156,000 K.W. to 256,700 K.W. The full Five-Year Plan target of 110,200 K.W. has been realised even during the fourth year of the Plan. Out of the estimated cost of Rs. 30·86 crores, it is expected that Rs. 30·68 crores would have been spent during the Plan period. The aggregate power demand increased from 130,000 K.W. to 208,000 K.W. and the units generated from 630 millions to1,055 millions. A total amount of about 3,000 miles of H.T. lines and 4,500 miles of L.T. lines have been added to the grid during the five years. Over 1,500 villages were electrified as compared to a target of 250 villages per annum for the composite State. More than 15,700 pump sets were connected up by the State Electricity Department.

The draft outline of the Second Five-Year Plan which has recently been approved by the National Development Council has been formulated with the principal objectives of a sizeable increase in national income so as to raise the level of living in the country, rapid industrialisation with particular emphasis on the development of basic and heavy industries and a large expansion of employment opportunities. To achieve this end, the draft outline provides for an investment of 4,800 crores of rupees in the public sector and 2,400 crores of rupees in the private sector. In the above structure of the plan frame, a sum of Rs. 440 crores in the public sector and Rs. 50 crores in the private sector have been provided for the developmen[illegible] ...wer in the country.

As far as Madras is concerned, the development of electricity even from the early nineteen thirties was planned on the basis of an extra high tension grid covering all the districts of the State. We have within the past two decades, built up a compact grid comprising a total of about 15,000 miles of E.H.T., H.T. and L.T. lines, serving all the districts of the State except South Kanara for which Jog Power from Mysore State will be shortly made available. The installed generating capacity of Madras State at the end of 1955–56 is about 256,500 K.W. while for all-India, this figure is expected to be 3·5 million K.W. The Madras power scheme for the Second Plan contemplates raising the installed capacity to 560,000 K.W. against 6 million K.W. for the whole of India, that is, the present installed capacity in Madras will be more than doubled by the end of the Second Plan period. With this installed capacity, it is hoped to meet the power needs of all the heavy, medium and small scale industries that are contemplated in the State, besides the growing needs of agricultural, domestic, and other uses.

The draft Plan for the power schemes of the Madras State was prepared bearing in mind the anticipated demand and the resources.

Sixty-one Crore—Scheme.

The schemes as originally approved by the Planning Commission were estimated to cost Rs. 61·10 crores. Subsequently the provision of Rs. 209 lakhs under acquisition of electrical undertakings was excluded by the Planning Commission and an increased provision [illegible] Rs. 162 lakhs under transmi[illegible] stribution was [illegible] rovision was thus [illegible]

effecting a 5 per cent e[illegible] recently suggested by th[illegible] Commission, the provision projects under Second P[illegible] 5,759·8 lakhs out of the tota[illegible] of Rs. 17,506 lakhs fixed fo[illegible] Plan. The provision for d[illegible] plans under Electricity about 30 per cent of the [illegible] allocated for the State.

It will be seen that the d[illegible] expenditure envisaged in t[illegible] Plan for Madras power [illegible] nearly double that in the period. These schemes [illegible] employment to about 30,[illegible] Also about 2,500 additio[illegible] will get supply from the [illegible] end of the Second Plan peri[illegible]

The power projects incl[illegible] Second Plan for the M[illegible] comprise the balance [illegible] schemes of the First F[illegible] which are under execu[illegible] schemes to be taken up [illegible] Plan. The schemes of the which are to be continued in Plan are—

(1) The Madras Plant, giving an additional installe[illegible] of 30,000 K.W. ;

(2) The Periyar H.E. Sc[illegible] an installed capacity of 105,[illegible]

(3) the transmission a[illegible] bution scheme ; and

(4) acquisition of electri[illegible] takings all estimated to cost [illegible] crores.

The new schemes which [illegible] taken up in the Second Pl[illegible] [illegible] H.E.

ransmission and distribution
ncluding the Travancore border
ıalpet line to avail 26 M.W.
vancore-Cochin Government ;

Sandynallah Reservoir

Pykara Dam Power-House
with an installed capacity of
.W. ;

anasam Dam Power-House
an installed capacity of

vement to existing power-
ansmission lines and sub-
and

ıvestigation of new schemes.

timated expenditure in the
period on the new schemes
4,395 lakhs.

Periyar Scheme.

our schemes of the First Plan
into the Second Plan period,
ır Hydro-Electric Scheme is
. This scheme was sanc-
e Planning Commission
after the conclusion of
gotiations of the Govern-
the Travancore-Cochin
ling the royalty to be paid
of the Periyar waters for
ıeration. The scheme
ıe construction of a power
durai district for utilising
lischarge from the Periyar
servoir below the existing
ıel where a head of about
ıs available for power
The Periyar lake which is
core side of the border of the
ıd Travancore-Cochin States
chment area of 240 square
an average annual rainfall
ıes. With the proper regula-
e Periyar waters, it will be
possible to develop power
ıe non-irrigation period also,
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red in a new reservoir that
proposed to be built at
reaches across the Vaigai
ion purp oses. A certain
of water could therefore
harged even during non-
period also and stored in the
ervoir to be used eventually
n purposes. The capacity
ıg irrigation tunnel ly
d

The power-house will be located in the ghat section of the main road from Cumbum to Thekkadi and will be about 35 miles from Theni in Madurai district. There will be initially 3 numbers 50,000 H.P. turbines each directly coupled to 35,000 K.W. generators, with associated step-up transformers and switch gear. A fourth set will be installed at a later date.

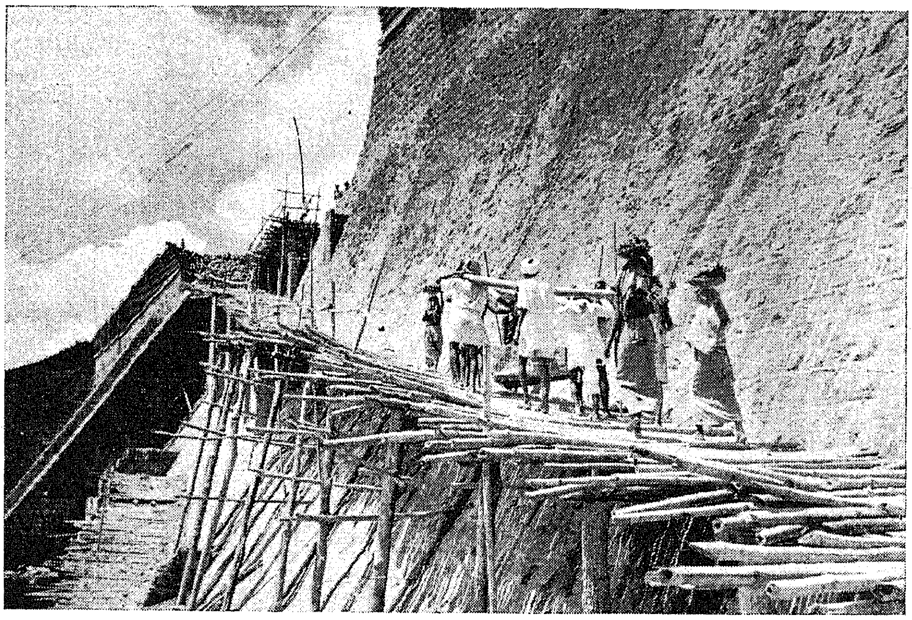
A system of 110,000, 66,000 and 33,000 voltage transmission lines and sub-stations connecting the power-house to the Madras grid will convey the power to the various load centres.

The scheme which is estimated to cost Rs. 10·47 crores will add 105,000 K.W. of installed generating capacity to the grid.

The scheme was inaugurated on 11th February 1955 by the Chief Minister and the works are in good progress. Contracts have been awarded for the supply of penstocks, valves, generating plant, sub-stations and transmission line materials and the first unit is expected to go into service by the end of 1957.

Madras Plant Extensions.

This is the second biggest scheme of the First Plan continuing in the Second Plan period. The scheme contemplates an additional generating capacity of 60 M.W. in three stages to augment power supply in the Madras City. One 15,000 K.W. set under first stage and another 15,000 K.W. set under the second stage have been



Irrigation and Power

The cost of irrigation and power projects included in the First Plan was Rs. 970 crores, of which irrigation accounted for Rs. 720 crores. The Second Plan proposals for irrigation include taking up of 195 projects in addition to those which have continued from the First Plan. With the completion of these projects an estimated additional area of 12 million acres would be brought under irrigation, apart from 9 million acres through minor works ; t he total irrigated area in million

In the field of power generation has gone up from 6,575 million kilowatt hours in 1950–51 to 11,000 million kilowatt hours in 1955–56, and the installed capacity has gone up from 2·3 million kilowatt to 3·4 million kilowatt. The target for additional power capacity has been fixed at 15 million kilowatt.

The Second Plan aims at extending power facilities to all villages and small towns with a population of over ten thousand. This marks really a big advancement in what is truely one of the most vital aspects of our planning

already commissioned. Preliminary works on the third stage involving the erection of a 30 M.W. set with two boilers have been commenced and orders 'ave been placed for the boilers, turbo lternator, switch gear and the circulang water system. The third stage i expected to be completed by the en of 1957-58 and will involve an expenditure of Rs. 2·71 crores during the Seond Plan period.

Acqution of Electrical Undertakings.

ThFirst Plan envisaged the acquisitiof 27 private and 27 local authorities dertakings in the present Madras Stat By the end of 1951-52, three priv undertakings and 20 local autlities undertakings had been acqed. No progress could be made in ensuing years as the Madras Eldcal Undertakings Act of 1949 wavalidated by the Supreme Court. Thlegal defects have since been reed in 1954 and during 1955-56, forivate undertakings and two local arities undertakings were taken o The balance of 20 private undertgs and five local authorities undertgs are to be acquired during the I period and the State Plan ided for an expenditure of Rs. 309 s. Recently the Planning Com-- ion excluded a provision of Rs. 209 is and allowed only Rs. 100 lakhs. the acquisition of electrical underings has been decided by the Government as a matter of policy to enable ect distribution of power to the imate consumer, the matter is being ken up further with the Planning ommission.

Jew Schemes under the Second Five-Year Plan.

Kundah Hydro-Electric Scheme.—This is the biggest of the new schemes of the Second Plan and will be the biggest of all the hydro-electric schemes of the State.

The development of the Kundah basin in the Nilgiris hills is proposed to be taken up in four stages. The first two stages only have been investigated and will be taken up during the Second Plan period. The first stage involves the construction of a storage reservoir of the capacity of 5,500 million c.ft. on the Avalanche and Emerald streams with low pressure tunnels and penstocks leading to the power-house No. 1 on the right flank of the Kundah river.

In the second stage, the storage will be improved by an additional reservoir on the Upper Bhavani of capacity 3,500 m.c.ft.

The gross head available for power-house No. 1 will be 1,180 feet and the power-house will have an installed capacity of 40,000 K.W. comprising 2 units each of 20,000 K.W.

A diversion dam on the Kundah river will be built below the power-house No. 1 to collect the tail waters from power-house No. 1 as also the free flow from 44 square miles of free catchment. This will form the forebay for power-house No. 2 located on the left bank of the Pegumbahalla stream, a tributary of the Kundah. This station will have a gross head of 2,470 feet and an installed capacity of 140,000 K.W. comprising 4 units of 35,000 K.W. each.

The works are expected to be completed by the end of 1960-61, viz., the last year of the Second Plan period.

The power generated at Kundah will be fed into the grid by a system of 110 K.V., 66 K.V. and 33 K.V. lines.

The scheme is estimated to cost Rs. 35·44 crores out of which it is proposed to spend Rs. 22 crores during the Plan period.

The Canadian Government have approved to give aid to the scheme under Colombo Plan to the extent of ·20 million by way of machinery and materials.

The Transmission and Distribution Project envisages the construction of a number of secondary transmission lines required for taking the additional power to the remotest corners of the State.

Including the transmission lines proposed under the Kundah and Periyar Hydro-Electric Scheme, an additional 8,200 miles of E.H.T. and H.T. lines and 6,500 miles of L.T. lines will be erected in the Second Plan period.

In addition, a provision of Rs. 12 crores was made for rural electrification in the State. The Planning Commission has now increased this by an additional provision of Rs. 162 lakh The scheme is intended for building u distribution lines to expand rur electrification programme and brin electricity to the nooks and corne of the various districts of the State.

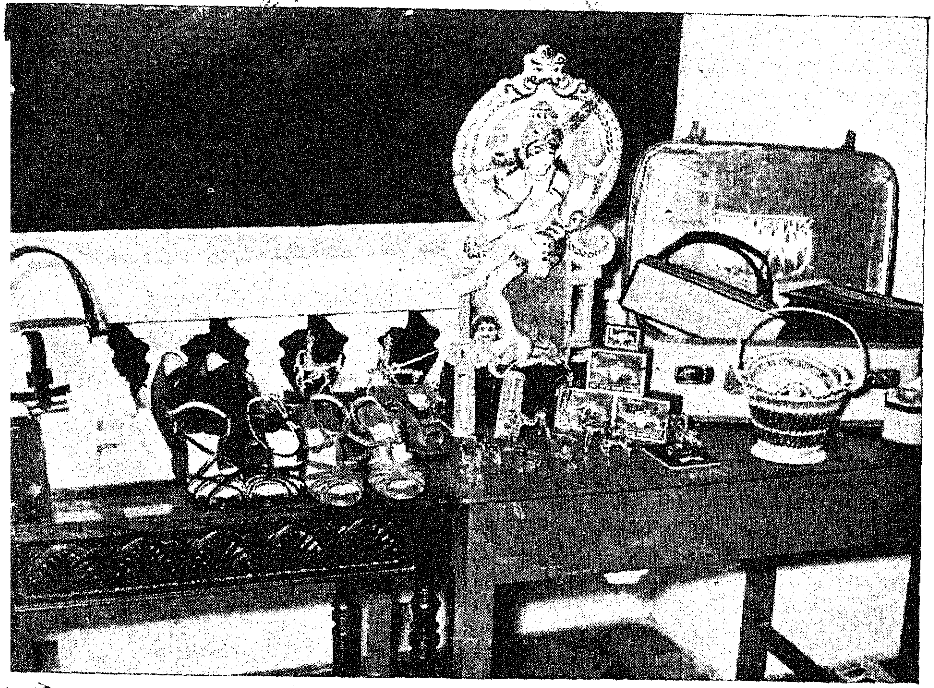
Madras State already ranks firs in the matter of rural electrificatio with over 3,500 villages electrifie up to the end of 1955-56.

There are now about 33,000 pump sets working on electricity and thi number will be increased to 57,000 b end of Second Plan period.

Sandynallah Reservoir Scheme.—Th Sandynallah Reservoir Scheme envi sages construction of a storage acros the Sandynallah river about 6 mile from Ootacamund. The water thu stored will be diverted to Pykar Reservoir through a tunnel and th will result in an additional total annu generation of 54 million units at Pykara and Moyar power-hous The scheme is programmed to be com pleted by 1959-60 and would involv an expenditure of Rs. 96·8 lakhs.

Pykara Dam and Papanasam Da power-houses.—These schemes envisag the installation of generating sta one at the foot of the Pykara and the other at the Tambraparni to utilise the head available at the da for power geneation. A single genera ing unit of 3,000 K.W. capacity wi be installed at the Pykara Da station and a single 4,000 K.W. s in the Papanasam Dam power-hous The estimated costs of the schemes a Rs. 30 lakhs for Pykara Dam pow house and Rs. 41 lakhs for the Pa nasam Dam power-house. Work o these will be taken up by 1957-58 ar power-houses commissioned by 1959-

The per capita consumption electricity which is a recognised ind of the economic advance of an was 10 units for Madras at the co mencement of the First Plan and now 21 units for Madras. It is hop to raise this figure to 50 units by t end of the Second Plan period. will be still far behind the We countries, where the per capita sumption is of the order of 2,000 4,000 units. We have therefore go a long way ahead if we are to att a standard anywhere near that of t Western countries.



These dolls, leather goods, baskets, etc., are some of the beautiful products of our villages

Dolls for the Dear Ones

Toy Industry in Madras State

Dolls and other toys are made in ay, wood, paper and cloth in many aces in the State. The artistic and 'perior varieties are made in the stricts of South Kanara, Madras, lem, Coimbatore, Tiruchirappalli, njore and Madurai. The articles oduced include variety of things such imitation fruits and vegetables, imals, birds, insects, models of house-ld utensils, Hindu deities and the like. ie toys produced in some of the places ch as Guindy, Kumbakonam and nbasamudram have won more than a me.

How they are made.

The wooden dolls and toys are made ually out of local light wood. y are first turned on country lathes l then lacquered in various colours. isels of fine quality, files, saws, rews and country lathes are the tools mmonly used. The making of articles superior quality requires dexterity d skill. Government propose to rt shortly two training centres at Erode and Ambasamudram with a view to train local workers in the production of better and modern types of wooden dolls and toys.

Clay models

Small models of insects, reptiles, birds, etc., are made in brass by some brass-smiths in Madurai.

Clay dolls of superior quality are made in Panruti, and Bandipalayam in South Arcot district and in Srirangam in Tiruchirappalli district. The chief raw material required is clay which is easily available at the centres where the industry is carried on. Paints and varnish are purchased locally. Clay models are baked before they are painted and varnished and are modelled by hand or moulded. Usually clay models are made in moulds made of plaster of paris, cement or asbestos. For models of certain Hindu deities, copper plate moulds are used. The workers carry on the industry with their own funds. A co-operative society has also been formed at Cuddalore for this Industry. In recent years' some of the clay toy worker have switched over to papier machie industry. Toys and dolls of fairl high quality are made at Guind and Tanjore. The Government ar also running a training-*cum*-production centre at Pulivalam in Tiruchirapalli district. A co-operative society h also been recently formed at Bhuvanagiri for this industry.

Soft toys for children hav not developed to any appreciable ext in the State. A few good quality sof oys are made at Kumbakonam and her places by Christian Mission Con ts.

Can be exploited for publicity

As pointed out by the Governmt of Andhra, the toys making indry can be successfully exploited for p city purposes, models of proj, factories, etc. set up under the F. Year Plan and also themes portray the awakening and the new life ge rated amongst the people as a res of the working of the welfare st could certainly be made at th centres. It may be mentioned in t connection that not only the t industry but other handicrafts such pith work could also be utilised f making such models.

Do You Know?

In 1955-56, tourist traffic earned for India foreign exchange to the tune of about Rs. 10 crores.

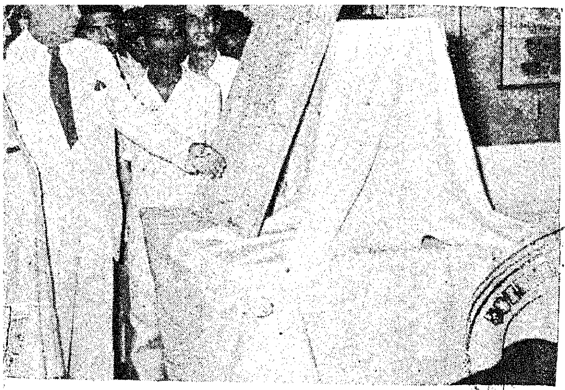
The Indian Railways purchased Rs. 76·86 lakhs worth of khadi during 1955-56, compared with Rs. 10·13 lakhs in the previous year.

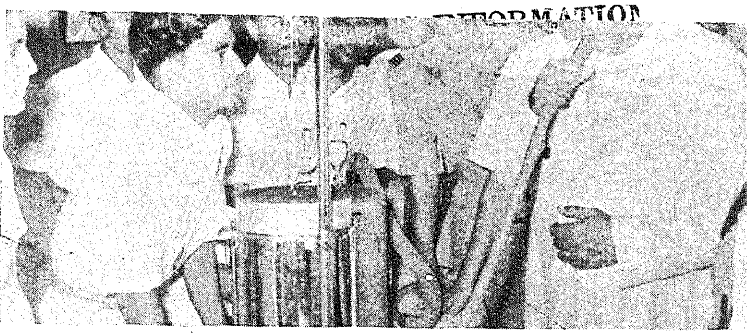
The Government of India have so far sanctioned Rs. 24·57 lakhs as grants in the shape of equipment, etc., to 13 States for filaria control.

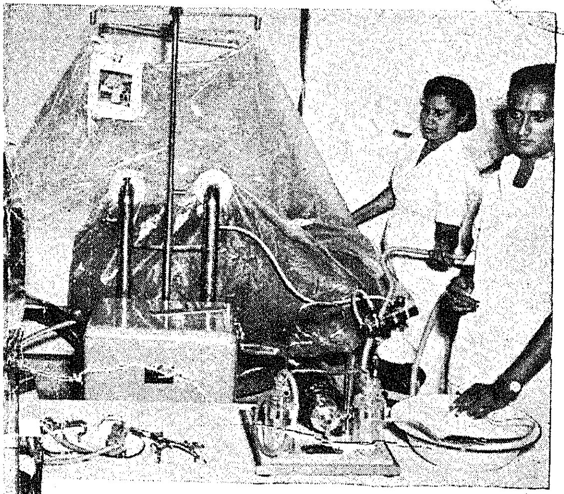
Production of bicycle tyres in India rose from 5,226,005 in 1954 to 5,748,100 in 1955.

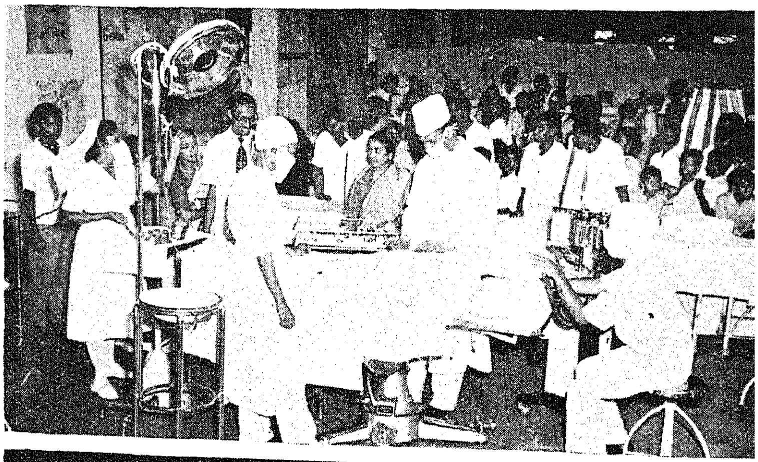
The All-India Handicrafts Board has set up a pilot centre at Surat for the revival of the brocade industry. Expenditure incurred on the scheme up to the end of July 1956, was over Rs. 40,000.

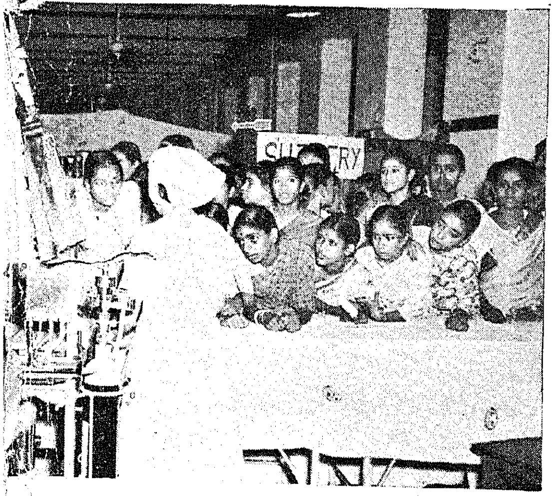
FOURTH MEDICAL EXHIBITION

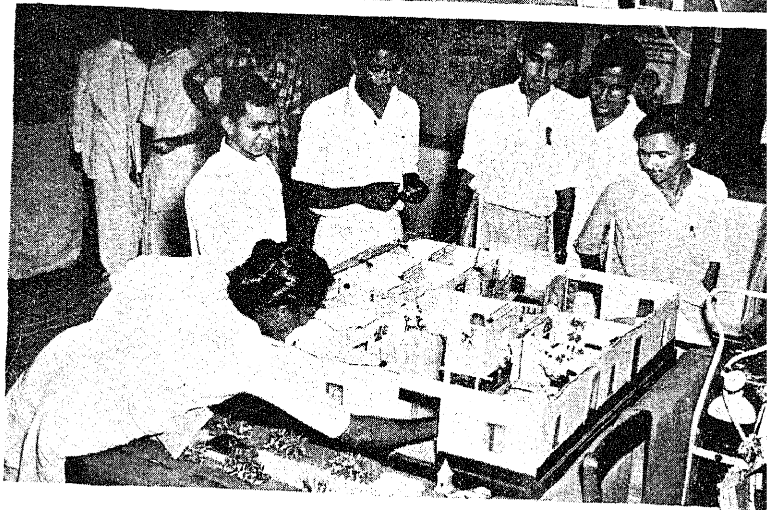




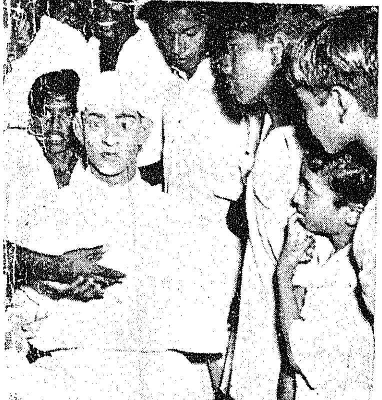


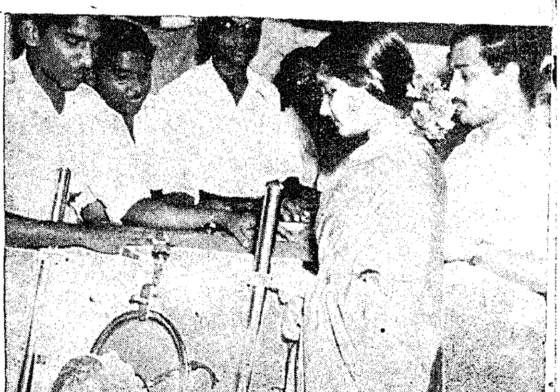






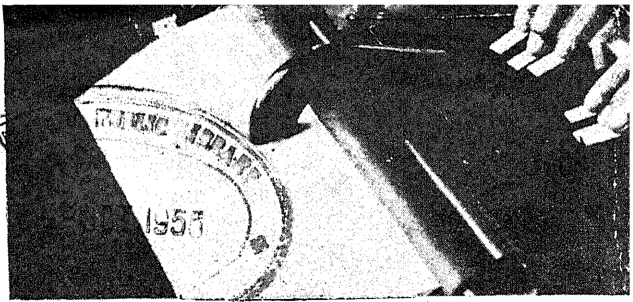
Shri Sri Prakasa, Governor of Madras, inaugurated the Fourth Medical Exhibition at Stanley Medical College. A large number of public and students visited the Exhibition.

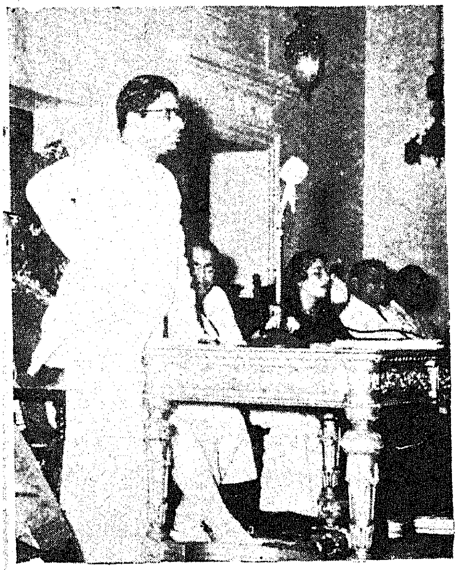


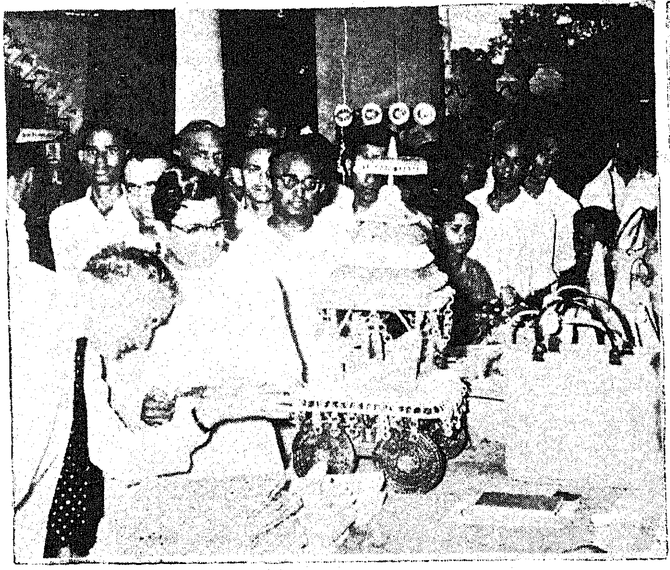


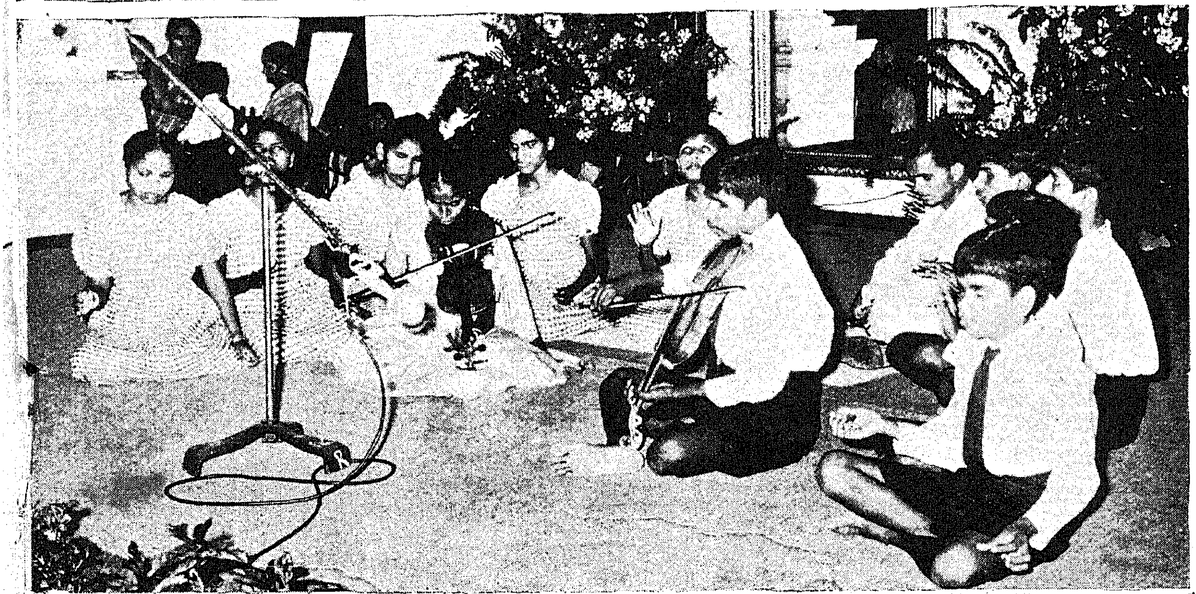
COTTAGE INDUSTRIES

PILOT SCHEME for the development of Small-Scale Industries in Coimbatore District includes improved methods of processing, modern simple implements and training facilities for unskilled artisans. The pictures show some of the main Small Industries like palm fibre processing, basket making, leather goods manufacture, Wardha *Ghani*, palm-gur, mat weaving, etc. Many of these village industries are organized on co-operative basis.









The Silver
Celebrations of th
ment School for
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an Exhibition
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Livestock Improvement and Development

OCT 1958

Animal Husbandry in the Second Five-Year Plan

Dr. D. PATTABHIRAMAN, G.M.V.C., A.I.D.I., Director of Animal Husbandry, Madras.

The Animal Husbandry schemes in ..e Second Five-Year Plan have been ..awn up taking into consideration all ..oblems connected with animals in ..alth and disease and the experience ..ined during the First Five-Year Plan ..riod, and cover all aspects relating .. the development and preservation of ..estock.

A sum of Rs. 344·80 lakhs has been ..rovided for Animal Husbandry and ..airy schemes of this department.

The Animal Husbandry schemes ..ncluded in the Second Five-Year Plan ..an be broadly classified under the ..ollowing headings :—

(i) Livestock improvement and development.

(ii) Control of livestock diseases.

(iii) Education and research.

(iv) Dairying and milk supply.

The All-India Key Village scheme ..vas introduced during the First Five-..Year Plan with a view to improve the ..eneral efficiency of cattle by the ..doption of scientific methods of breed-..ng, feeding and management and to ..levelop the cattle wealth of the country ..n ever widening areas in the quickest ..ossible time. There are at present ..ifteen key village centres with sixty ..ey villages attached to them. It is ..roposed to continue and expand the ..xisting key village schemes by adding ..wo key villages for each centre during ..he Second Plan period. The Second ..Plan also provides for an addition ..f twenty key village centres with 120 ..ey villages attached to them. Four ..entres with 24 key villages are ..roposed to be opened during each year ..f the Plan. Each key village will have ..n artificial insemination centre which ..vill cover 5,000 cows and buffaloes ..f breedable age.

Scientific Breeding.

With a view to overcome the shortage of the required number of breeding bulls and to intensify livestock improvement by the utilization of better bulls for breeding milch cows through artificial insemination in the urban areas of the State, it is proposed to start thirteen artificial insemination centres during the Plan period, in addition to the seven centres opened during the First Plan period which are functioning satisfactorily.

A considerable number of pedigree breeding bulls required for grading up of non-descript cattle are expected to become available from the key villages of the State. A scheme for the utilization of such bulls has been included in the Plan. According to targets envisaged, forty-two supplementary extension centres for utilizing bulls produced in the key villages areas are proposed to be established during the Second Plan period. Each centre will have twenty approved bulls for serving a compact area covering 2,000 cows of breedable age.

The scheme for the distribution of pedigree bulls has been in vogue for several years in the State and is very popular. This scheme is proposed to be continued during the Second Plan period, so as to meet the needs of the areas not covered by either the all-India Key Village Centres, the extension centres for the utilization of bulls produced in the key village centres, or the artificial insemination centres. According to the programme drawn up, sixty breeding bulls will be distributed during each year of the plan.

In order to improve further the local stock graded through the All-India Key Village Scheme and the artificial insemination centres, it is essential that the graded calves produced in the areas covered by those schemes should be attended to properly up to maturity so as to make them available for br.. ing operations elsewhere. But there is a tendency on the part of the cattle owners to sell away their calves when they are young. In order to give an incentive to the cattle owners to rea.. their calves up to maturity it is proposed to pay a subsidy of Rs. 10 pe.. calf per mensem from the date o.. weaning to the date of maturity.. the total number of months for whic.. the calf subsidy is paid not ex.. eighteen months in the case of .. Calves of both sexes, m..le a.. for roa.. calves, in breeding tracts and fe.. calves only in non-breeding tracts, a.. eligible for subsidy.

Importance of Feeding.

An important aspect of livesto.. improvement is the proper feeding an.. management of animals. The effects .. better breeding can be largely negativ.. if the animals are not properly .. Feeding also increases milk product.. of cows. The supply of green fod.. so necessary for the healthy up-keep.. cattle and milch cows is meagre. I.. therefore necessary to prodvide a.. quately for increased production .. fodder as well as its preservatio.. scheme for the development of .. and fodder resources in the .. is contemplated under the P.. and provides for increasing fod..r pr.. duction and adoption of ..prove.. methods of preservation by ayme.. of Rs. 10 per acre of irrigated ..nd an.. Rs. 5 per acre of unirrigated and .. key village areas. Accordin.. to t.. programme drawn up, 7,460 acres .. be brought under the cultivation .. fodder crops during the Second Fi.. Year Plan period.

During the period of the Second Pla.. 13 units are proposed to be started f.. the organisation of rural herd and mi.. recording. In these units, regu.. recording of milk yields, conducti.. progeny tests, etc., will be do.. Su..

cords are necessary for evaluating .e results obtained from the breeding hemes so as to facilitate the selection correct type of breeding stock for ture use for breeding and milk production.

According to the provision in the lan, four goshalas are proposed to e developed during the Second ive-Year Plan period. Only goshalas hich agree to maintain productive nimals will be aided. Each goshala which owns already animals of recognized breed will be helped by the donation of ten cows and one bull of good pedigree.

A special scheme for the development goshalas is also proposed to be taken p in the State for the development of n goshalas. Assistance will be rendered to ten private cattle breeders to lish ten goshalas at the rate of year. Small establishments ed by individuals who are cattle-nded and taking keen interest in e welfare of cattle and their improvement and who own a minimum of 25 res of land and are willing to main-in 20 productive cows and set apart suitable portion of their holding for ising fodder crops to meet the full dder requirements of their cattle ll be registered as goshalas. Each ala will be given a subsidy accord-ioo the proposals, of Rs. 5,000 for dring buildings, sheds, and purchase quipment and a good pedigree bull improving the herd. A premium Rs. 300 per annum for the maintenance of the bull and an annual dy of Rs. 2,000 for the maintenance herd will also be granted. Calves these goshalas will also be ig r a subsidy of Rs. 10 each r m for a period of two years.

Cattlesheep and poultry exhibitions ay a ital part in the efforts of overnment to improve the livestock lth of the State. The spirit of petition and healthy rivalry created such shows is a great incentive to tle improvement. These shows ve to educate and to encourage ublic on methods of scientific breeding, eding and management of cattle, eep, goats and poultry. During the ars 1956—1961 five State shows and venty District shows are proposed to conducted.

New Proposals.

A cattle farm in Ramanathapuram district and a sheep farm in Chingleput district are proposed to be started during the first year of the Plan. These farms, besides helping to overcome the difficulty in obtaining male-stock for breeding, will serve as demonstration centres in scientific breeding. In the sheep farm, research will be undertaken in well-known breeds of woolly and mutton types of sheep as also cross breeding for production of wool and mutton.

To improve soil fertility and to increase the fodder production, to make the farms self-sufficient in fodder and grains, it is proposed to introduce soil conservation measures in an area of about 3,000 acres in the Livestock Farms of Hosur, Malabar and South Kanara.

Construction of necessary residential and non-residential quarters in the existing livestock farms will also be taken up during the Plan period. Intensive cultivation of fodder crops in 325 acres in Hosur Cattle Farm will be undertaken under irrigated conditions in order to develop mixed farming.

The All-India Key Village Scheme contemplates the development of not only cattle but all other species of livestock also. For the intensive development of poultry in the key village areas, it is proposed under the Plan to introduce 20 poultry grading units.

In order to create enthusiasm in private poultry breeders to pay more attention to poultry development and to popularise poultry rearing extensively which will not only help to increase the per capita income of the rural fold but also raise the nutritional level of the diet, ten private breeders or associations will be given a subsidy of Rs. 1,000 each during each year of the Plan, the total number of such breeders or associations receiving subsidy being 50 for the Plan period.

Under the All-India Plan of Poultry Development, a regional farm will be started at Coimbatore with 25 extension centres. Each extension centre will get 100 birds and will be established in a development block. This scheme also contemplates the supply of cocks and pullets in compact areas and training of breeders in poultry husbandry. The main object of this scheme is to improve the local breeds of poultry, through superior strains and increase the production of eggs.

Control of Livestock Disease.

To reduce mortality and to combat contagious and other diseases which reduce the vitality, productivity and working efficiency of the animals, it is necessary that this State should have adequate facilities for the protection of livestock from contagious diseases. The State of Madras is now practically free from rinderpest and it is proposed to divert attention to the control and eradication of other contagious diseases of cattle like Anthrax, Haemorrhagic Septicaemia, Black Quarter, Brucellosis etc. For this purpose, a motorized mobile unit is proposed to be provided in each of the districts and advanced inoculations and vaccinations carried out in the endemic areas. In addition, suitable measures are proposed to be taken for the control of ectoparasites and flukes.

As already mentioned, though this State is free from Rinderpest, the adjoining States are not yet free from the disease and the All-India programme of Rinderpest Eradication is in operation in those States. To meet the needs of this campaign, in the Southern region, with regards to biologicals, it is proposed to increase the production of Rinderpest Freeze Dried vaccine at the Institute of Veterinary Preventive Medicine, Ranipet, by 370,000 doses per year.

Under the Plan, it is proposed to open 97 Veterinary Institutions in the State to bring the total number of institutions in the State at the end of the Second Plan period to 195 for 120 taluks. Facilities in the existing institutions will be expanded considerably to increase efficiency by the supply of microscopes to the Veterinary Institutions, electrification of Veterinary Institutions, construction of buildings for Veterinary Institutions and quarters for staff.

Education and Research.

The expansion of the normal activities of the department, the execution of the schemes in the Communit Development programmes, the five ye

tc., have all created an acute of Veterinary personnel. To this situation, the number of ıs to the B.V.Sc. course of the Veterinary College which was from 80 to 100 in 1954–55, further increased to 120 from mic year 1956–57. Since the of this course is four years eed for the personnel is very horter course of Veterinary 11 months' duration was in the year 1954–55 with ns and this number has been to 100 from 1955–56. To needs of the increased , a three storied building with hall, laboratories and other in the Madras Veterinary nd an additional hostel are to be constructed. In order t specialized knowledge to the of the Madras Veterinary College in the subjects of (a) Therapeutics and Toxicology and (b) Gynæcology, separate chairs in these two subjects are proposed to be created in the subjects. The Animal Nutrition and Animal Genetics sections of the Madras Veterinary College which are of recent origin are proposed to be expanded into full-fledged laboratories and training sections for the graduates of the Madras Veterinary College and for research scholars.

There is an immediate need to develop the Institute of Veterinary Preventive Medicine, Ranipet, into a regional centre and to expand its productive capacity of biological, and increase facilities for research. Therefore, it is proposed to strengthen the Institute, by appointing a Pathologist, Bacteriologist, etc., with corresponding expansion of laboratories and building facilities.

Milk Colony for City.

It is proposed to colonise cattl a suitable place near the City gradually evacuating the City M Cattle. In the first instance, a col will be established at Madhavaran accommodate 4,000 milch cattle. target for the Plan period is evacuation of 7,000 head of ca from the City. There will be provi in the cattle colony for the care of stock, rearing of calves, veterinary etc. Wholesome hygienic milk p duced in the colony will be supplied the City population. In order supplement the supply of fresh c milk in the City and in order that poorer sections of the people may milk at cheaper rates, it is proposed install a new plant at the Governm Milk Factory, Madras, for the ma facture of toned milk.

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Training in Poultry Farming

'ggs or Chicks?" has been an old difficult problem for the philosophic minds ut both the egg and chicken pose no problem to the common people. To hem, they are solutions, sometimes easy and readymade!

The Government of Madras have ictioned the institution of a training ırse in Poultry Husbandry in this ıte and the first course was inau- -ated at the Poultry Research ıtion, Teynampet, last month. The ›vernment should be congratulated sanctioning this training course. ıis is a new scheme and not merely training course for departmental ɜn. This is pre-eminently a training ~se for farmers' sons and hence, national scheme of immense ssibilities.

Our country has a rich stock of ›ultry, for our statistics show that ›re are 73 million chickens in India. :though we have this large number poultry, their economic value is ›ry low, when compared to the im- ›ved fowls of Western countries. he fowl that we have in our country eighs less than 3 lb. and produces ıly 50 eggs of very small size per year /hen we compare with the improved vls elsewhere which weigh 4 to 7 lb. ıd produce over 200 eggs of standard e per bird per year. These exotic ‹ds produce such large number of because of their scientific methods eeding, proper feeding, etc. Our ernment have realised the need the improvement of the poultry ıstry and a number of Poultry search Stations and Demonstra- n Units have been opened to supply eeding stock and hatching eggs of proved-fowls to the public at a low st. Poultry development is an im- ortant factor in our national economy, or it provides the much needed subsi- liary occupation in rural areas. Much progress however could not be made in his as well as other branches of ıational development activities for want of qualified men to take up uch activities.

Under our Second Five-Year Plan ımber of Poultry Demonstra- are to be opened. It is proposed to open 25 poultry units with 100 birds in each National Extension Service and other Development Blocks and to supply pedigree birds to the people at concessional rates. It is also proposed to encourage

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SRI T. PURUSHOTHAM, M.L.C.

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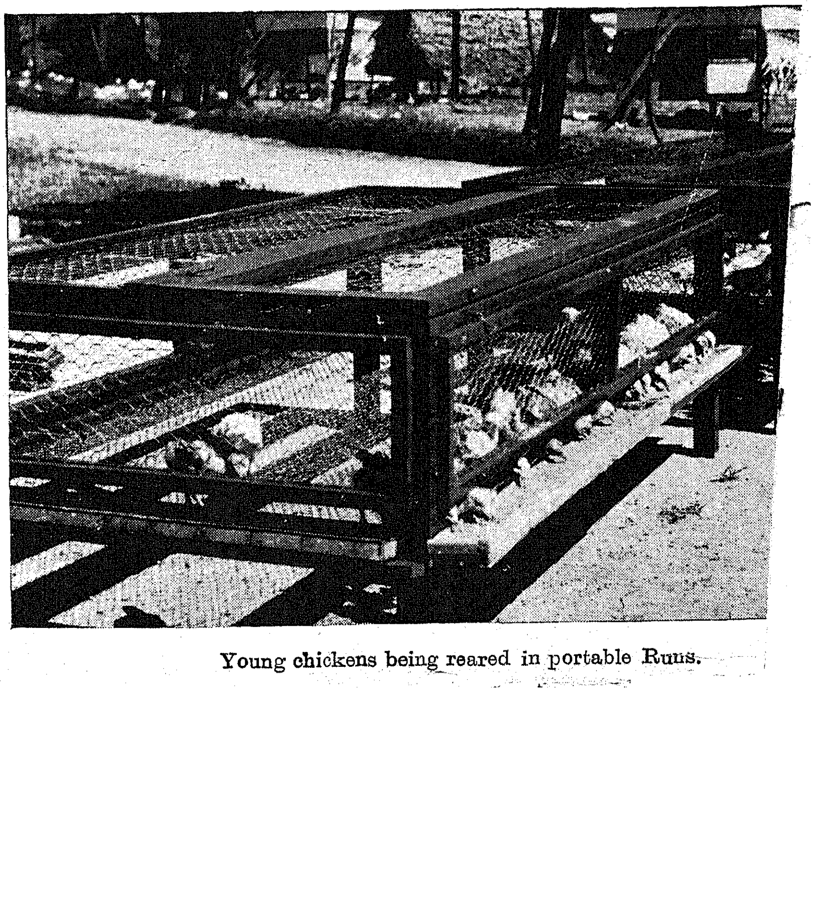
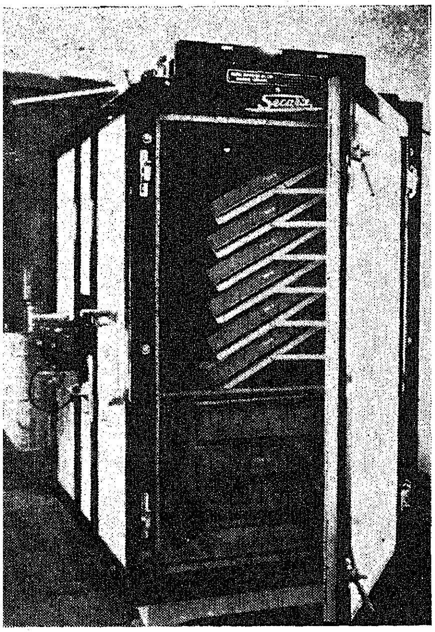
poultry breeding by private persons by giving them a subsidy up to a maximum of Rs. 1,000 each. Thirty-five poultry units in key villages will also be established to encourage poultry industry at village level. All these require the assistance of trained persons. I am glad that under the new scheme of training, several educated young men have come forward to tak farming as a profession and themselves with scientific knc poultry husbandry. In vie great need for technicall personnel, this course of tı poultry husbandry has b tuted by the Government as scheme and I have no hesit there is bright future for the taking up this course.

There is another importa the problem. The Indian poor in calories and proteins. poultry meat are indeed high and protective food. The consumption of eggs per ann 8 in our country when co what it is in Western coun 400 eggs per head per ye from eggs being used for are also used in confectio catering industries. Eggs sary ingredients in some of tries such as tanning, i preparations of paints, varnis cines, soap making, glues, binding and printers' ink industry and trade can thus flourishing proposition. Th demand for eggs and pou many countries. As egg are highly perishable, of c cannot be stored over long pe

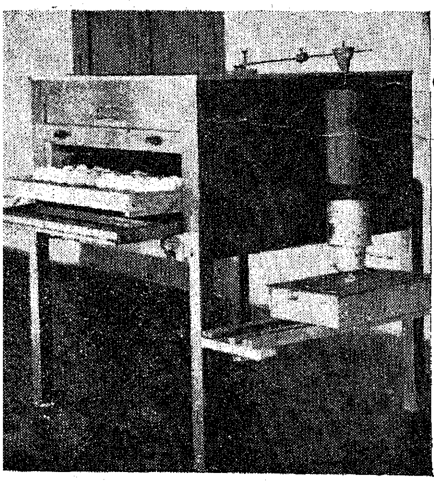


Young chickens being reared in portable Runs.



ammoth E'ectrical Incubator at the Poultry Research Station, Madras—capacity 1,408 eggs.

nodern science comes to our rescue, 'or these foodstuffs may now be stored mder refrigeratory conditions without leterioration in their quality for long period. Eggs can be converted into rozen and powdered forms. Poultry neat can be canned and the machinery and equipment and technique required 'or the purpose are not elaborate or costly. Co-operative hatcheries and poultry production can be undertaken in our villages. All this is possible, now that we have electricity in almost all the villages. Our country has thus a bright prospect in this branch of Livestock production, for, here is a cottage industry most suited to village conditions and I trust the Government will work out such progressive schemes with the trained personnel that will be made available as a result of comprehensive training in Poultry Husbandry and I wish some at least are sent abroad to study modern developments.



Eggs under incubation in a kerosene-worked hot air Incubator.

This training course now will consist of two batches of twelve students in each batch. The first batch will be trained for four months from September to December and the second batch from January to April this year. Each student will get a stipend of Rs. 30 per mensem during the course. As I said primary object of this course is to attract young sons of the farmers and train them in scientific methods. That is the outstanding feature of this scheme and I trust after the training the young men will go back to the villages for developing the industry. I hope a large number of young men and women from rural areas will get trained year after year, so that the requirements of the expanding industry may be served thereby.

Facts and Figures

During 1955, India produced 6,613,200 bottles (2 oz. each) of fountain pen ink.

About 580,000 acres are now under potato cultivation in India.

Chemical and ceramic machinery of the value of Rs. 2,35,000 was manufactured in India during 1955.

Lead production increased to 2,234·4 tons in 1955 from 1,131·6 tons in 1952.

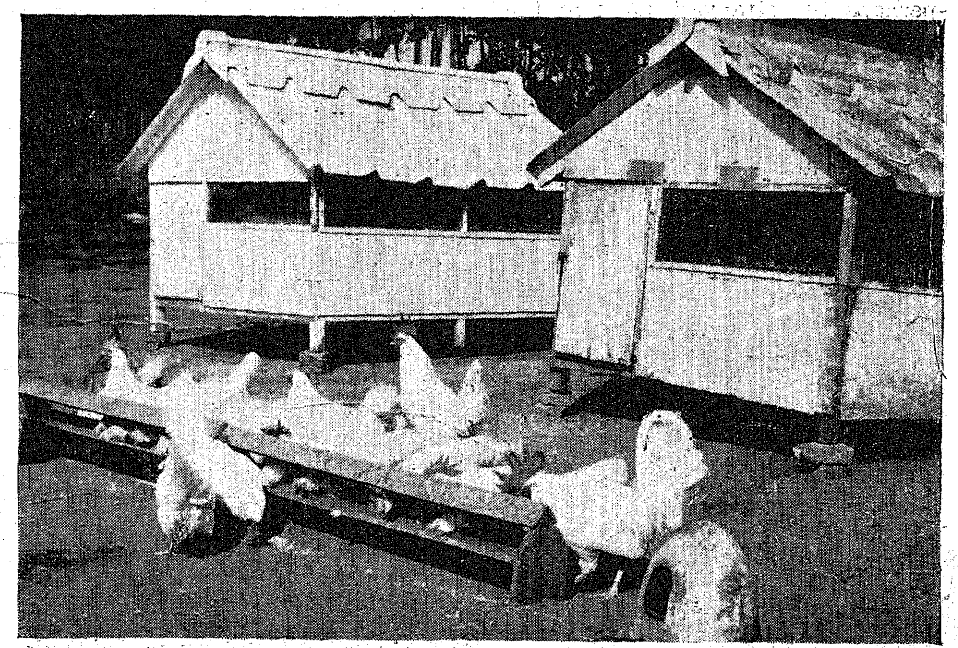
Estate Duty collections in India during 1955 totalled Rs. 1,44,69,884.

About 101,800 radio receiving sets were manufactured in India during 1955–56.

The Government of India have sanctioned Rs. 15·24 lakhs for road development work in Bombay, Hyderabad, PEPSU, Manipur and Tripura.

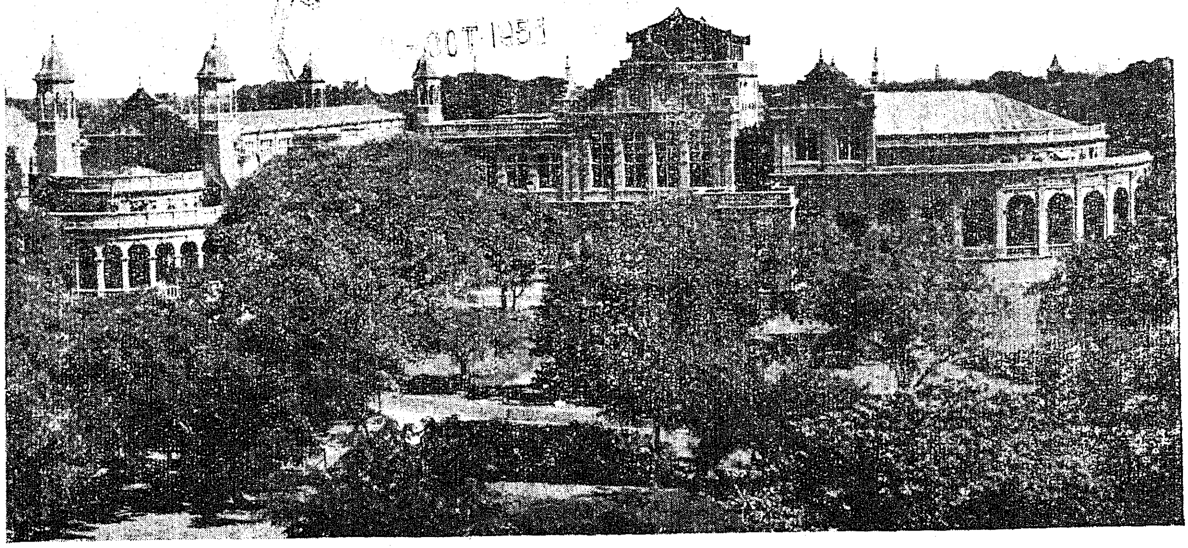
Train lighting dynamos of the value of Rs. 15 lakhs were manufactured in India during 1955.

The Union Government propose to subsidise the establishment of about 15 Tuberculosis demonstration and training centres in the country during the Second Plan period.



Feeding of chickens in waste and contamination proof hoppers.

-OCT 1951

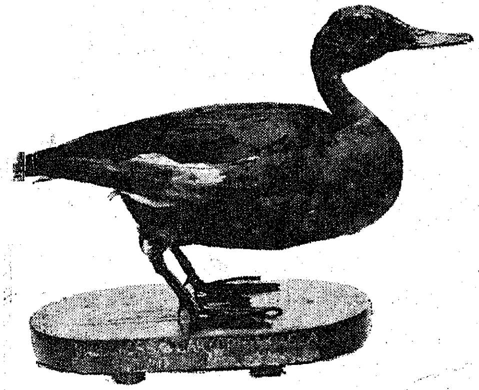


Madras Museum—Zoological Gallery

Some Recent Notable Additions

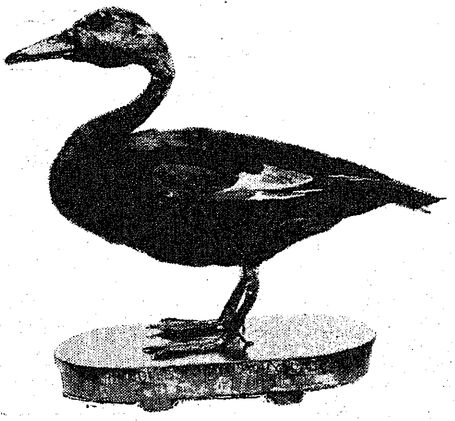
SRI S. T. SATYAMURTI, M.A., D.SC., F.Z.S.

Perhaps the most valuable and unique among our recent zoological acquisitions were a pair of the *Pink-headed Duck* (*Rhodonessa caryophyllacea*)—perhaps the strangest duck in the world. When a pair of skins (male and female) of this remarkable duck was offered for Rs. 150 by Mrs. S. D. Inglis from her late husband's ornithological collections, I grasped at the opportunity and had them purchased for the Museum as I fully realized the rarity and unusual value of the offer. Although the skins were rather old and rigid, the colour was still remarkably fresh on the feathers, and the meticulous care and skill with which our Taxidermist relaxed and mounted them as exhibits fit enough for display in our Bird Gallery were indeed admirable. They have now been displayed in a separate show case with a distribution map and a descriptive label, but in due course we hope that it would be possible to have them installed in a modern, illuminated diorama with a painted background.

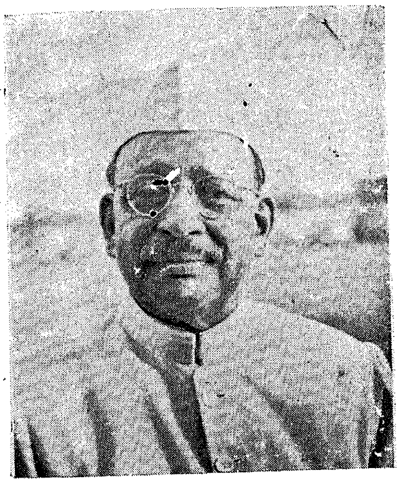


The Pink-headed Duck: Female.

The Pink-headed Duck is perhaps the rarest, most interesting and certainly the most "romantic" species of Duck. It is about the size of a large Mallard, but unlike it, carries its neck erect, when swimming. Its habitat is among the small plains lakes of the remotest hinterland of Bengal, north of the Ganges and west of the Brahmaputra. A few are said to be found in Orissa, Oudh and the Nepal Terai. It seems strange to reflect that only as far back as the 'nineties' the Pink-headed Duck could be bought in Calcutta markets for as little as Rs. 15 each. Yet a few years ago, Mr. Stewart Baker wrote: "Forty years have elapsed since I saw it and no reward has sufficed since then to induce 'shikaris' to visit its breeding places and find me a nest of eggs." He added that in spite of its rarity he considered that it would be many generations before it would be definitely



The Pink-headed Duck: Male.



11 JAN 1958
MADRAS

Continue to Keep the People Informed

ON *the occasion of the issue of the Special Number of* Madras Information *in January 1956, I send my greetings to its readers, and congratulate our Information and Publicity Department on their continued and successful efforts to keep the useful journal going from year to year.*

The activities of Government in all its varied departments, do really need to be widely known, for the common man must realise that Government exists primarily for him, and is striving incessantly for his behoof and prosperity. It is but natural that people generally do not know, and cannot be expected to know, on their own initiative, all that is being done, as the work is not directly before their eyes.

Madras Information *supplies many useful and important facts and figures which would enable the public to appreciate the progress that is being made in our nation-building activities; the difficulties that we have still to overcome; and the directions in which our attention has to be given if we are to succeed in our endeavours. It is therefore a welcome idea that the Special Number seeks to review the progress made by the State under the first Five-Year Plan, and study the targets prescribed in the second Five-Year Plan.*

The Journal has my very best wishes for continued success in the years that lie in front, in attracting to itself an ever-increasing circle of readers and their continued sympathy and goodwill.

Sri Prakasa

Governor of Madras.

For a Greater Tomorrow!

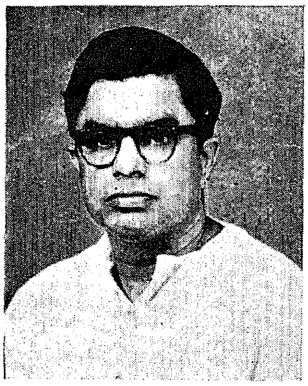
I have always felt that man is tested most in his adversity. If he stands up to that, he survives for a greater tomorrow. While writing this, my mind goes to the unfortunate victims of the recent cyclone in Tanjore, Ramanathapuram and Madurai. Thanks to their own innate courage and the timely help rendered by the personnel of the various departments of the Government, Union and the State, they are standing up to their adversity and fighting to resume their even flow of life so suddenly interrupted, by the devastating fury of Nature.

Several lives have been lost, houses have been swept away and people rendered homeless. That brings home to us, who have been entrusted with the responsibility of administration, the tremendous duty of creating a new order where common people will have homes with more solid foundations, a few rupees in the local bank and a granary with sufficient stocks of paddy to fall back upon when Nature visited them in her aspect of fury and destruction.

Our National Plans are intended just for bringing about such a kind of new order. You will read in the pages of this Annual Number of Madras Information, *informative details of the First and Second Five-Year Plans. Not all may be interested in mere details. But all of us, irrespective of any persuasion, political, religious or social, have to contribute to the national well-being and solidarity and the welfare of the State. Without people's enthusiasm and effort, the Plan can never attain its fulfilment successfully. Unless it has life given to it by the voluntary co-operation and effort of the people, it cannot become the active lever for reconstruction. I want everyone in our State to contribute whatever he or she can to the success of the National Plan which is designed to eradicate unemployment, illiteracy and poverty and usher in prosperity. I am hopeful of the future and I have faith in our people. Let us, during the year that has dawned and the succeeding years, strive towards reaching the common goal of national well-being and unity.*

Chief Minister.

01 JAN 1958
MADRAS



The Second Five-Year Plan

C. SUBRAMANIAM,
Minister for Finance and Education.

THE First Five-Year Plan was principally designed to solve certain urgent major problems facing the country at the time it was framed, and it may be said that within its limited objectives it has achieved a considerable measure of success, particularly in attaining self-sufficiency in food. More than the actual achievements, it has given the people confidence in themselves and has created in them a spirit of self-reliance and willingness to work for their own betterment. The people have also become plan-conscious and the interest taken in the preparation of the Second Five-Year Plan has been keen and widespread all over the country. Planning for such a vast country as India does not consist merely in listing out a number of projects to be executed, but involves a fairly clear formulation of the principal objectives to be aimed at and the means to be adopted in achieving them. Planning in a democracy further implies that both the objectives and the methods are fully understood by and have the active support of the people, so that they would be prepared to put forth the effort and make the sacrifices necessary to implement the Plan.

In order to provide an overall picture of the background against which the Second Five-Year Plan for the country has to be formulated, certain papers were prepared by the Panel of Economists attached to the Planning Commission, the Central Statistical Organisation and the Indian Statistical Institute. The basic approach to planning made in these papers has been widely discussed in the press, by representative bodies and in various State Legislatures and has been generally accepted by the National Development Council. As a result of the discussions which have taken place, the following broad decisions have been reached regarding the scope of the Second Five-Year Plan :—

(1) The Plan should make a significant contribution towards tackling the main problems facing the country, viz., poverty and unemployment and should be capable of leading to an increase in national income by about 25 per cent over a period of five years and of providing employment opportunities to about ten million persons,

(2) special stress should be laid on the development of basic heavy industries so as to have command over means of production in strategic sectors and to accelerate the process of capital formation. At the same time, there should be an extensive development of village and small-scale industries for producing consumer goods, as these will provide a substantial volume of employment in the countryside without involving heavy capital outlay, and

(3) the Plan should give concrete expression to the policy of achieving a socialistic pattern of society.

Keeping the above objects in view, certain all-India targets for production in different fields and for the expansion of social services have been suggested and the Madras State Plan has been framed so as to ensure, to the extent possible, that the level of production and of development of various social services does not fall short of what is contemplated for India as a whole. Though the limitation of overall financial and other resources has been borne in mind, it is intended that the Plan should provide to the maximum extent possible for the actual needs of the villagers in regard to the more elementary requirements such as Primary Education, Drinking Water-supply, Rural Sanitation, Agricultural facilities,

THE COCONUTS—
A PRECIOUS
COMMODITY

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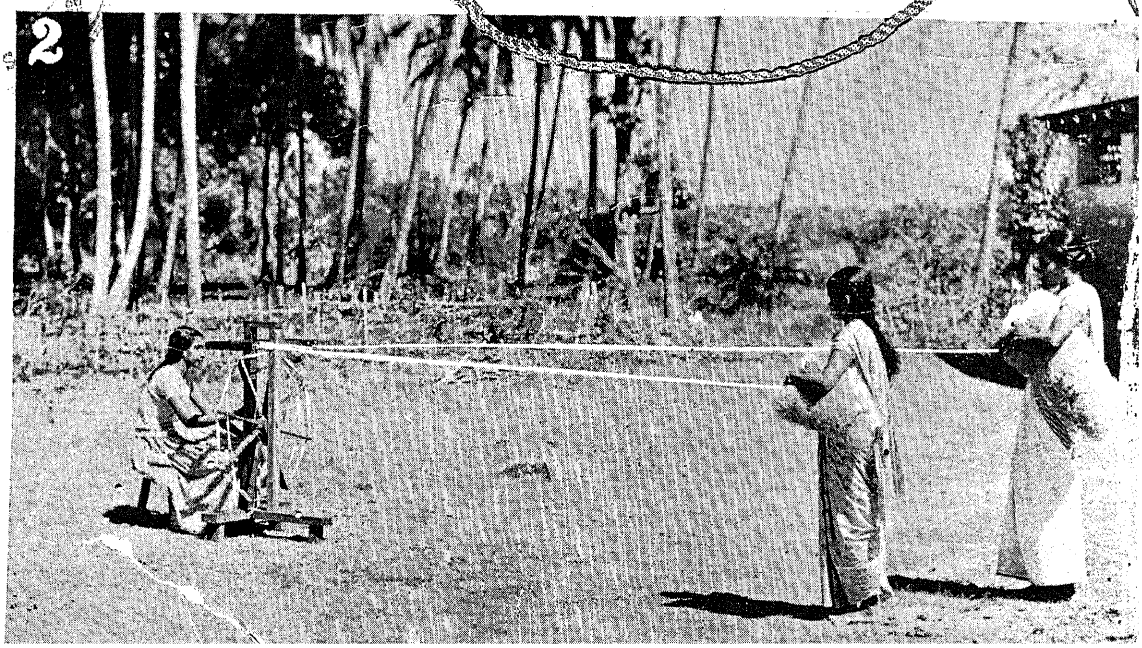


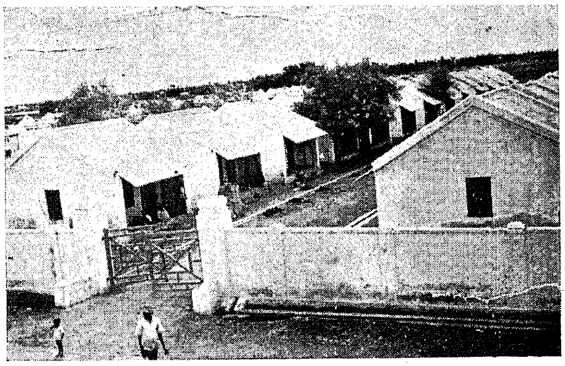
Medical help and Communications. District Plans are being prepared on this basis and arrangements have been made to actively associate the people at all levels and at every stage of planning. Local initiative and local effort and resources will be mobilized to the maximum extent possible in implementing the plans evolved by the villagers and finance should not, therefore, be a serious bottleneck in the matter.

The National Extension Service movement will be extended to cover the whole State by the end of the Second Plan period and 40 per cent of the blocks will be selected for Intensive Development as Community Development Blocks. It is agreed on all hands that this movement is bringing about a silent revolution in rural India by helping it to shake off its inertia and improve its economic condition by self-help and co-operative effort. Each National Extension Service and Community Development Block will become a unit for integrated and all-round development covering Agriculture, Animal Husbandry, Village Industries, Medical Facilities and Communications, and blocks nearer the bigger towns will be developed so as to cater fully to the needs of the towns and derive the maximum benefit by their proximity.

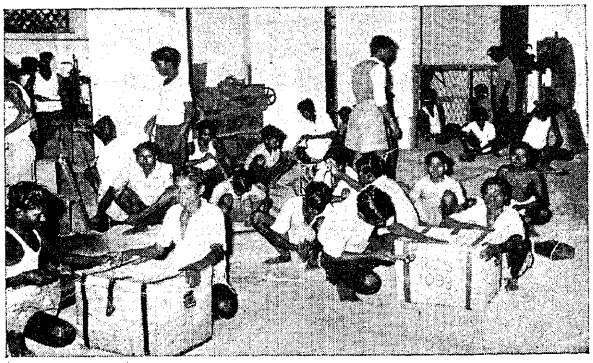
It is not possible within the compass of this article to cover in any detail all the schemes included in the Plan, but the more important lines of development visualized are indicated below :—

Agriculture

Allowing for the growth of population and a slightly higher standard of consumption, an all-India target of 15 per cent has been suggested for increase in the production of foodgrains. The target proposed for the Madras State is an increase of 7 lakhs tons, of which 6 lakhs tons will be provided by an intensification of the various agricultural schemes already in operation, viz., use of fertilizers, improved varieties of seeds, popularising the Japanese method of cultivation, etc., and the remaining 1 lakh tons by minor and major irrigation schemes. A larger increase in the production of cereals and pulses may result in a sharp decline of prices and the bulk of the 25 per cent increase in agricultural incomes contemplated during the Plan period will, therefore, have to be achieved by a diversification of production with emphasis on increasing the production of the more valuable forms of food such as fruits, vegetables, milk and fish and commercial crops like sugarcane and cotton. Sugar production will be increased from 30,000 tons to 90,000 tons per year and the production of cotton from 2·95 lakhs bales to 4 lakhs bales per year. On the horticultural side, it is proposed to have a model Orchard-*cum*-Nursery in each district and at the end of the Plan period, 5 lakhs of plants will be distributed to cover an area of 10,000 acres. In view of the limited scope for extending the area under Irrigation in the State, special attention will be paid to soil conservation work on dry lands so as to preserve soil fertility and help in the retention of moisture. It is proposed to take up this work in about half the cultivated area in the Nilgiris (about 25,000 acres), about 1,250 acres in Kodaikanal and some of the problem areas in



New Harijan Colony



Harijan children—learning a craft

1 JAN 1958

other districts covering an extent of over 36,000 acres. A new Land Colonisation Scheme will be taken up in the Attappady Valley.

Animal Husbandry, Dairying and Milk-Supply

In order to improve the quality of the cattle, it is proposed to open 20 new Artificial Insemination Centres with 120 Key Villages (at six Key Villages per centre) during the Plan period and 13 more Artificial Insemination Centres in Madras and other bigger towns. Forty-two Supplementary Extension Centres will be established for the utilization of approved breeding bulls from the Key Village areas. A new Cattle Breeding Farm will be opened for the important Hallikar breed. Ninety-seven new Veterinary Institutes will be opened, in addition to dispensaries that may be opened in Community Development Blocks with people's participation. Poultry-keeping as a subsidiary occupation in rural areas will also be widely developed during the Plan period. A cattle colony will be established at Erukancheri in the first instance to accommodate 4,000 milch cattle (to be evacuated from Madras City). One more colony will be established during the Plan period when facilities for growing fodder from sewage farms are developed. The Plan also provides for the installation of a new plant for the manufacture of toned milk and for the organization of new co-operative societies, so as to increase the quantity of milk supplied to urban areas from 40,000 to 60,000 Madras measures.

Fisheries

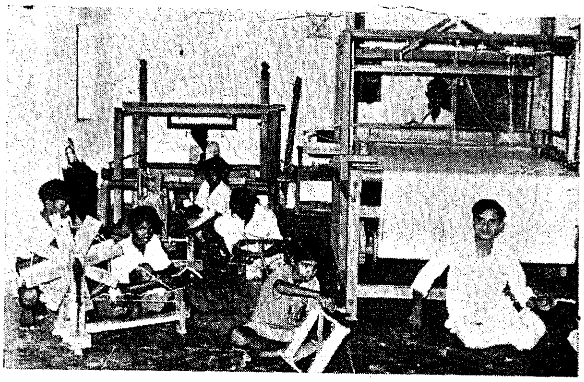
In addition to intensifying the existing schemes for development of inland fisheries, it is proposed to give special assistance to fishermen on the sea coast to develop deep-sea fishing. They will be given training in mechanised fishing and will also be supplied with specially designed boats, nylon nets and improved hooks at subsidized rates. Fishing Harbours will be developed at suitable river mouths and two dredgers will be purchased to keep the river mouths open. A comprehensive scheme of assistance to fishermen co-operative societies has also been framed so as to improve their economic condition and to facilitate the preservation of fish and the marketing of catches.

Forests

All the minor forests which were under Panchayat management and all the forests in the old Zamindari areas have been recently taken over. Most of them are badly denuded and are in urgent need of rehabilitation. Soil conservation measures mainly in the form of new fuel plantations will be taken up on an extent of about 80,000 acres of these forests and pasture will be developed in forest areas situated near the bigger towns. Fodder crops and fodder grass will also be extensively raised in the South Arcot and Chingleput districts. Wherever possible, the more valuable timber trees such as teak and hard-wood will be planted in the existing reserved forests. Valuable trees will also be grown on river and lake margins and along canal bunds and Railway lines. Soft-wood plantations will be raised on an extent of 16,500 acres to provide the valuable raw materials required for the match industry, which it is proposed to extend considerably on a cottage industry basis during the Plan period. The production of lac, casuarina, wattle, cashew, pepper and blue gum will also be stepped up during the Plan period.

Co-operation

The State Plan lays special emphasis on the organization of co-operative institutions to provide the bulk of rural credit and marketing facilities required by the agricultural population. It is anticipated that by the end of the Plan period, about 20 per cent of the credit needs of the agriculturists would be met by co-operative organizations and that 75 per cent of the villages would be served by co-operatives. The marketing

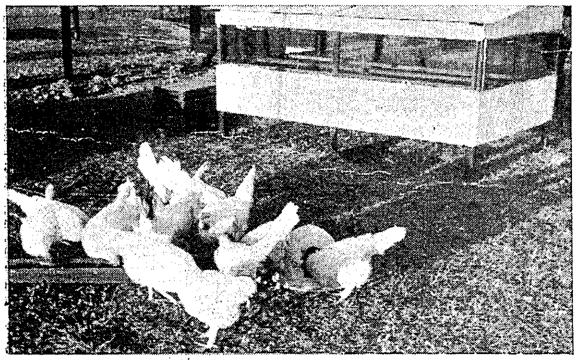


Harijan children—learning spinning and weaving

societies will, by then, handle about 10 per cent of the marketable produce of the agriculturists. The Plan provides for the requisite number of additional credit societies, rural co-operative banks, primary land mortgage banks and marketing societies to be opened during the Plan period. Short-term loans will be issued on the security of anticipated crops. There will be a net-work of godowns in all important marketing centres for providing storage and marketing facilities and many of the larger credit societies will also be encouraged to construct godowns of their own. The various marketing organisations will undertake the simpler forms of processing before arranging for the sale of agricultural products, but separate processing societies will be organised wherever necessary. State assistance to the co-operative organisations will take the form of participation in share capital, loans and subsidies for the construction of godowns and subsidies to meet the cost of managereal and supervisory staff. The State will also share in losses resulting from the write-off of arrears that may become irrecoverable owing to failure of crops, and the issue of loans to backward areas and to backward people.

Irrigation

Ten medium-sized projects which are now under execution will be continued and completed during the Second Plan period. These schemes will provide irrigation to an extent of about 1·89 lakhs acres. Six new schemes which will be taken up of which only two, viz., the new Kattalai Canal Scheme and the new Pullambadi Canal Scheme, will give any substantial addition to the irrigable area (12,000 acres and 15,000 acres respectively). Though this State has already practically reached the limit for extension of irrigation under big projects, it is possible to utilise the waters of certain streams now flowing through Travancore territory for the common benefit of large areas in both the Madras and Travancore-Cochin States. The most promising of such schemes is the Parambikulam-Sholiar-Aliyar Project which is essentially a scheme for utilising waters from a catchment area in Madras and it is hoped that with the good offices of the Government of India and co-operation of the Travancore-Cochin State it would be possible to take up this scheme during the Plan period.



Poultry farming

The Special programme of improvements to minor irrigation sources and the filter-point scheme will be continued during the Second Plan period. In addition, it is proposed to spend a sum of Rs. 50 lakhs on a scheme of desilting and raising the F.T.L. of tanks and an organised attempt will be made to tap underground water resources by putting down 300 tube-wells at the rate of 60 wells per year.

Power

The Plan includes four power schemes in progress and 8 new schemes, with a total programmed expenditure of Rs. 61·10 crores. When all the schemes are completed, the generating capacity will be increased by 307 Mega Watts. The most important of the new power projects is the Kundah Hydro-Electric Scheme which provides for the development of the Kundah Basin in the Nilgiris in four stages. The scheme will provide 145 Mega Watts of power during the Plan period and 180 Mega Watts on completion. Electricity will be extended to 2,000 more villages and electric connection given to 24,000 pump-sets at an average of 400 villages and 4,800 pump-sets per year. The availability of cheap power will give a fillip to the extensive development of small-scale and cottage industries contemplated during the Plan period and the requirements of all the heavy and medium-scale industries that may be started whether in the public or in the private sector will also be adequately met by the new schemes proposed.

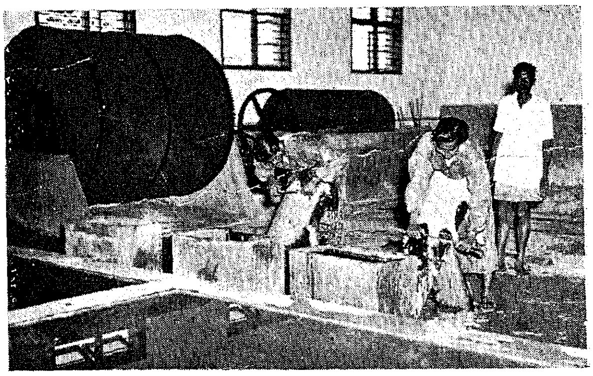
Industries

As already indicated, the main emphasis in the Second Five-Year Plan will be on the development of basic heavy industries which will be undertaken

by the Centre on an all-India basis. The development of heavy industries in Madras State has, so far, been negligible but the exploitation of the Neivelly Lignite deposits may open up a new era of industrial prosperity for the State. The investigations so far conducted hold out every hope that the difficulties caused by the high water-level would be overcome and that the mining operations could be carried on economically. As regards other heavy industries, the State Government have brought to notice of the Government of India, the facilities that exist for locating an Aluminium Plant in the Salem district and have also impressed on them the need for locating in Madras some of the major industrial projects in the public sector such as the manufacture of heavy electrical equipment, Pilot Blast Furnace, etc. The number of major industrial projects that can be undertaken by the Central Government is, however, necessarily small and there is a very wide field in which private enterprise can play a vital and useful part. There is scope for developing in this State, industries like paper mills, sugar and cement factories, manufacture of power alcohol, sulphuric acid and superphosphate and soda ash. It has been decided that such industries should be left to the private sector and it is hoped that industrialists would be forthcoming to take them up. Whatever assistance is necessary for starting such industries will be given by the Government of India and other institutional agencies, provided only that the schemes are technically sound.

The State Plan contains numerous schemes for the development of small-scale and village industries. Special attention will be paid to industries which will provide employment to a large number of workers, the chief among which are the leather and hand-made match industries. Four model production-*cum*-training units with mobile units attached to each of them have been proposed for the development of blacksmithy and carpentry which cater to the basic needs of the people. Other industries that will be developed are bee-keeping, village pottery, village oil industry, manufacture of Khandasari sugar, cotton ginning, groundnut decorticating, handpounding of rice, coir, sericulture and palm gur. In addition to a provision of Rs. 90 lakhs for grants and loans under the State-Aid to Industries Act, special schemes have been framed for giving assistance to small industries by way of supply of machinery and improved tools and equipment on the hire purchase system at normal or subsidised rates, supply of raw materials at cost price, free assignment of lands and grants for the conversion of part of houses into workshops, subsidies for the supply of electric power, etc. The success of all the steps taken for the development of cottage industries will depend mainly on the arrangements made for marketing the finished products and the Plan accordingly provides for an efficient marketing organisation. Steps will be taken to ensure that, as far as possible, production is organised against assured orders. The Khadi development schemes, intensive and extensive, will be considerably expanded during the Plan period. Adequate provision has also been made in the Plan for the requirements of the handloom industry and for assistance to weavers both inside and outside the co-operative fold. It is expected that, at the end of the Plan period, 2·8 lakhs looms (about 50 per cent of the total number in the State) will be in the co-operative fold and the total production of handloom cloth will increase from 495 million yards to over 900 million yards per year. Many of the schemes framed are, however, of a tentative nature and will be finalised after decisions have been reached on the recommendations of the Karve Committee.

A provision of Rs. 100 lakhs has been made for the expansion of the Industrial Estate at Madras and for the opening of two other Industrial Estates at important centres. Buildings will be constructed on these estates with all the amenities that may be required such as water-supply, electricity, etc.,



Leather Institute—Tanning

and these will be let or sold on the hire-purchase system to small industrialists. Provision will also be made for purchasing raw materials in bulk and supplying them at reasonable rates to individual units. The development of co-operative organizations in the industrial field would go some way towards achieving a socialistic pattern of society and a provision of Rs. 80 lakhs has been made in the plan for assistance to co-operative sugar factories and another Rs. 70 lakhs for the formation of other industrial co-operatives in which the workers themselves would be members and would share in the profits.

Communications

A comprehensive scheme for road development in the State has been framed at a cost of Rs. 11·10 crores including expenditure on inter-State roads and works financed from the Central Road Fund. 2,300 miles of new roads will be formed and, at the end of the plan period, there will be no village with a population of over 500 which is not connected by a good road to the main arteries of communication. Road connections to the smaller villages will be provided in the Community programme.

Development of inland waterways will be undertaken directly by the Centre. The Buckingham Canal will be connected to the Madras Harbour and improvements effected to the North Buckingham Canal and the Vedaranyam Canal. This Government have also recommended to the Government of India the execution of the Sethu Samudram Project which will connect the gulf of Mannar with the Palk Bay and provide navigation for ships without having to go round Ceylon. The technical aspects of this scheme are now being examined by a special committee.

Neiveli Lignite

Education

Considerable headway has already been made in this State in the provision of facilities for elementary education and by the end of the current year, schools will have been opened in all villages with a population exceeding 500. During the Second Plan period, elementary and secondary education will be further expanded in keeping with decisions that may be reached on an all-India basis. Elementary schools will be converted into Basic schools to the extent that trained teachers can be made available. The Plan also provides for increasing the pay scales of teachers in elementary schools and for making a beginning in the provision of midday meals to poor children in these schools.

As regards technical education, five new Industrial Schools will be opened in the State and all the existing Government Polytechnics will be improved. In addition, a scheme of training for craftsmen has been framed at a cost of Rs. 64·68 lakhs. These schemes will provide an adequate number of qualified technical personnel for undertaking the large expansion of village and small-scale industries contemplated during the Plan period.

Health

All the District and Taluk Headquarters Hospitals will be expanded and improved. Tuberculosis, Venereal diseases, Dental and Family-Planning clinics will be attached to each District Headquarters Hospital and each taluk Headquarters Hospital will have a minimum bed-strength of 50. Special schemes have been framed for improvements to the various teaching institutions and attached hospitals so as to make up-to-date and advanced training available to under-graduates and post-graduates both in the pre-clinical and clinical departments. A new Mental Hospital will be opened at Madurai and a Chronic Diseases hospital with a bed-strength of 500 in Madras City. On the whole, at the end of the Plan period, there will be an additional bed-strength of 5,500 in the various medical institutions in the State, i.e., an increase of about 43 per cent over the existing bed-strength of 13,100. Malaria control will be extended to cover all the Malarious tracts in the State and the control of Filariasis to all the eight districts in which the disease is common.

Water-Supply

The targets for the Five-Year period are 10,000 draw-wells and 400 composite schemes, each providing water-supply to two or more villages. In addition, the National Water-supply and Sanitation scheme which is intended to give protected water-supply and sanitation in areas liable to be affected by Cholera will be implemented in six districts. The allocation for water-supply and drainage works in urban areas has not yet been fixed. The completion of works which are now in progress will involve an expenditure of Rs. 4·91 crores in the Second Plan period and it is hoped that it would be possible to take up a substantial number of new works in addition.

Social Welfare

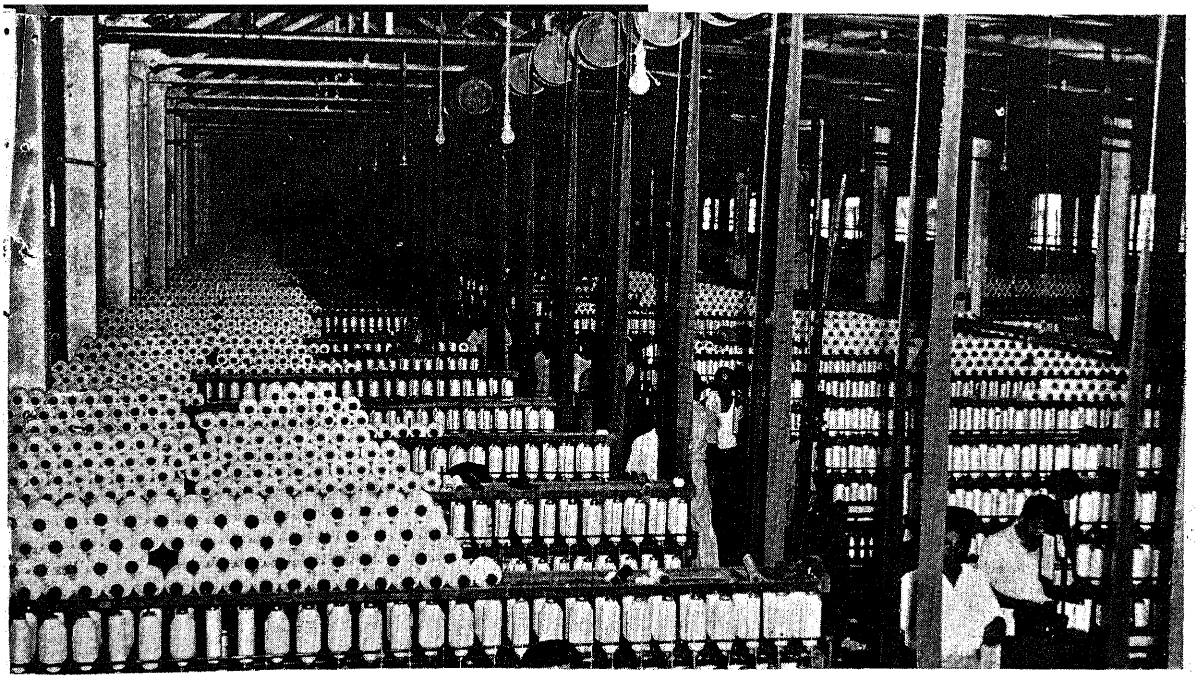
Housing is a field in which very little has been done so far and considerable headway has to be made during the Second Plan period. The actual provision to be made in the Plan under this head has not yet been finally decided, but schemes have been drawn up to an aggregate cost of Rs.10·24 crores including Rs.1 crore for town-planning and town development schemes and Rs. 3 crores for slum clearance work in urban areas outside the Madras City. In addition, special housing schemes on a subsidised basis have been proposed for the benefit of Harijans, fishermen, scheduled tribes and ex-criminal tribes. In all, a provision of Rs. 7 crores has been made for schemes relating to the welfare of scheduled castes, scheduled tribes and backward classes. Labour welfare and Women's welfare will also receive special attention.

No definite decision has yet been taken in regard to the total cost of the Madras Second Five-Year Plan. The provision to be actually made in respect of certain important fields of development such as housing, Urban Water-supply and Social Welfare will be determined only after the eventual all-India allocations under these heads are fixed. But it is expected that the ultimate size of the Plan will be of the order of Rs. 200 to 210 crores. For implementing a Plan of this magnitude, it is very important to ensure that properly trained personnel, both administrative and technical will be forthcoming in adequate numbers, and with this end in view, training schemes have been incorporated wherever necessary in the various departmental plans.

It has been estimated that the Plan will provide employment for about 3·30 lakhs persons. This is exclusive of the employment possibilities of the schemes relating to handlooms and Khadi. The former will give an appreciable increase of income to about two lakhs weavers and the latter will provide subsidiary employment to another 2 lakhs persons in rural areas. It is also expected that the various industrial schemes will provide subsidiary occupations to nearly 54,000 persons and secondary occupations for about 65,000 persons.

As pointed out by the Prime Minister, planning is a continuous process and the Madras Plan will, no doubt, have to be modified from time to time giving greater stress to the more promising schemes on the basis of the experience gained in the earlier years. A noteworthy feature of the Plan is the very large provision made for Social Services such as Housing, Education, Health, Welfare of Backward Classes, etc., which works out to 33 per cent* of the total Plan expenditure as compared with 17 per cent in the First Five-Year Plan. Local enthusiasm and local contributions will play an important part in the provision of these services and there is little doubt that these will be forthcoming in sufficient measure to make it possible to achieve a considerable advance in the living conditions of the people by the end of the Plan period. It must not be forgotten, however, that no country can have a standard of living higher than is warranted by its productive capacity and it is therefore essential that the maximum benefit should be derived from all the production schemes in the Plan. This calls for hard work on the part of everyone and for the fullest co-operation between the people and the Government servants on the one hand and between different sections of the people on the other. In particular, a tremendous organisational effort will be necessary if village industries are to play the vital role assigned to them in the Plan of increasing the production of consumer goods and of providing increasing employment opportunities. It is for every citizen to realise the problems and difficulties ahead and play his part in "this great adventure of building up a new and prosperous India."

* Does not take into account the additional allotment of Rs. 14·35 crores asked for in respect of general educational schemes.



INSIDE OF A
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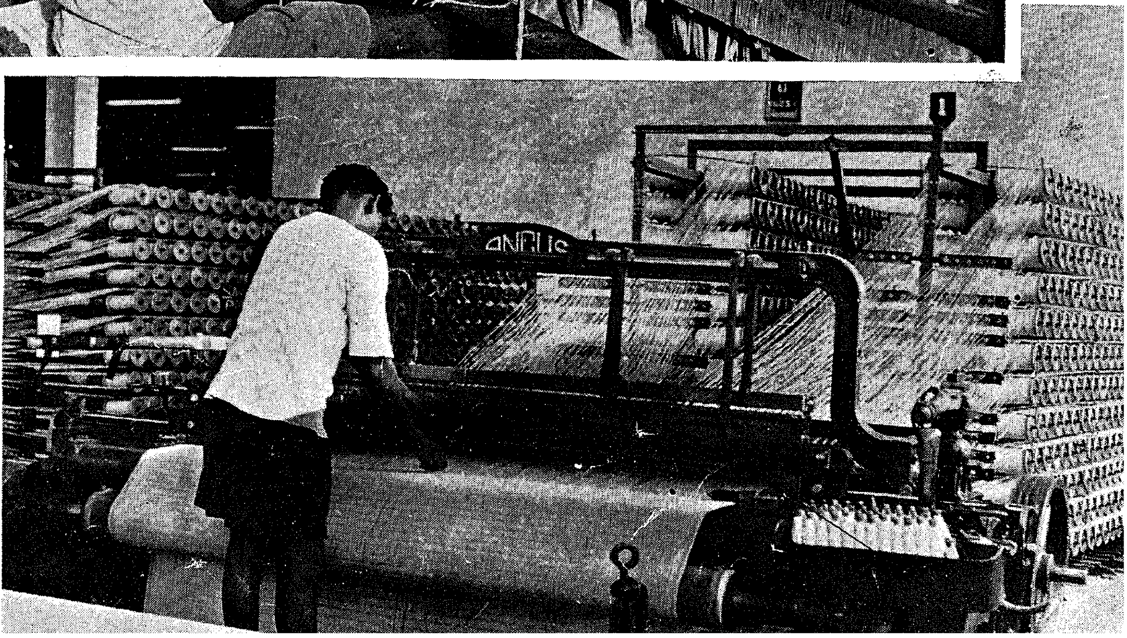


1 JAN 1958

Achievements under the First Five-Year Plan

T. N. S. RAGHAVAN, I.C.S.,
Development Commissioner.

THE period covered by the First National Five-Year Plan is April 1951 to March 1956. But the Plan itself was finalised only in 1952. The total outlay originally envisaged for the whole of India was Rs. 2,069 crores, made up of Rs. 1,241 crores by the Central Government and Rs. 828 crores by State Governments, but this was increased to Rs. 2,249 crores in 1953, mainly to provide for certain additional schemes for the reduction of unemployment and for special improvements to scarcity areas. The Plan of the composite Madras State was originally fixed at about Rs. 141 crores, but with the formation of the Andhra State on the 1st October 1953, it became necessary to prepare a revised Plan for the present Madras State. This revised Plan provided for an expenditure of about Rs. 84 crores over the five-year period, excluding the outlay on all Centrally sponsored schemes like Community projects and Development Blocks, National Extension Service and Local Development works. This figure was subsequently increased to Rs. 86·43 crores consequent on the inclusion of new rural electrification schemes and certain other minor adjustments.

The size of the Madras Plan was fixed mainly on the basis of the total anticipated resources of the State including Central assistance for certain classes of schemes and new taxation measures. But there was very little room for choice in determining the priorities under the Plan. A number of Post-War Reconstruction schemes had been under implementation in this State from 1946 onwards and these included many major irrigation and power projects on which considerable progress had been made at the time of the inception of the Plan. These schemes had, of necessity, to be continued and provided for in the Plan and the provision for major irrigation and power projects (Rs. 51 crores) therefore works out to as much as 59 per cent of the total outlay contemplated. Following the termination of hostilities in Korea, various inflationary tendencies were at work in the country and our foreign exchange resources were being used up quickly to import large quantities of food-stuffs to cover the serious food shortage. The Plans of the Centre had therefore to provide for the elimination of various shortages and bottlenecks in the industrial and transport organisations, while special importance had to be given in State Plans for measures to increase food production. Only comparatively small provision could therefore be made for other fields of development, particularly for social services. The actual provision made in the Madras Plan and the progress of expenditure on schemes included in the Plan by major heads of development are as given on next page.

The first two years of the Plan period were years of drought, when acute distress conditions prevailed in many parts of the old composite State of Madras and the financial resources of the State were put to severe strain. In 1953–54, all departments were mainly concerned with problems relating to the partition of the State and this accounts for the very low expenditure on the Plan in that year. Allowing for these factors, the progress of expenditure during the first four years may be regarded as satisfactory except under Social Services the allotments for which had to be curtailed in the earlier years. Steps are now being taken with the assistance of the

Government of India to increase the tempo of development of these services. The arrangements for implementing the various schemes are well under way and it is anticipated that the large Budget provision of Rs. 25·79 crores on the Plan for the current year would be fully utilised and that consequently there would, on the whole, be very little shortfall in the expenditure provided for in the Plan.

Success in implementation should however be judged not on the basis of the actual expenditure incurred but on the extent to which the schemes have contributed to the well being and prosperity of the people and the more important achievements in different fields are briefly indicated below.

Irrigation

The progress in the execution of the various major irrigation projects has generally been according to schedule. By far the most important of these is the Lower Bhavani Project in Coimbatore district which will provide irrigation to an extent of 2·07 lakhs acres. The project has been nearly completed and an extent of 1·15 lakhs acres was actually irrigated in 1954–55. Another project which is nearing completion is the Malampuzha Project which will stabilise and improve the irrigation facilities for an area of 46,000 acres in Palghat taluk of the Malabar district and water is already being supplied to an extent of about 20,000 acres. The various schemes for drainage improvement in the Cauveri Delta have been completed. The Manimuthar Project in Tirunelveli district provides for the construction of a storage reservoir across the Manimuthar river to supplement the irrigation of an existing ayacut of 83,000 acres under the Thamraparani System and to improve the irrigation under a number of rainfed tanks in the district with a total ayacut of about 20,000 acres. The early launching of the scheme was facilitated by a contribution of over Rs. 100 lakhs made by the people of the district. The Mettur Canal Scheme which is intended to benefit an extent of 45,000 acres in Coimbatore and Salem districts is making good progress. The excavation of one of the main canals has been completed and water was allowed for the irrigation of about 7,300 acres in 1954–55. Other schemes under execution are the Vaigai Reservoir

Main heads of departments.	*Provision made in the First Five-Year Plan.*	*Expenditure incurred to the end of* 1954–1955.	*Budget Estimate,* 1955–56.	*Total.*	*Percentage of column* (3) *to column* (2).
(1)	(2)	(3)	(4)	(5)	(6)
		(*Rs. in lakhs.*)			
Agriculture, Animal Husbandry, Forests Fisheries, etc.	1,141	768	168	936	67
Irrigation projects and Power projects.	5,105	3,610	1,759	5,369	71
Cottage industry and other industry.	172	133	30	163	77
Highways	358	257	56	313	72
Social Services including Education, Health, Housing and Amelioration of Backward Classes.	1,867	1,224	566	1,790	66
Grand total ..	8,643	5,992	2,579	8,571	69

Project which will irrigate large areas in Madurai and Ramanathapuram districts, the Amaravathi Reservoir Project in Coimbatore district, the Sathanur Reservoir Project in North Arcot district, the Krishnagiri Project in Salem district, the Araniyar Project in the Chingleput district and the Walayar and Mangalam Projects in Malabar district. A provision of Rs. 9·7 crores has been made in the Second Five-Year Plan for the completion of the various schemes under execution. The area that will ultimately be benefited by all the projects is 4 lakhs acres and an extent of 2·2 lakhs acres has been brought under irrigation already giving an additional production of 1·1 lakh tons of food-grains.

Major irrigation schemes are however not possible everywhere, and the large number of tanks and other minor sources which provide small pockets of irrigation in the predominantly dry areas play an important part in the rural economy of the State. An ambitious scheme for the systematic improvement of these smaller sources was launched during the Plan period and so far improvements have been effected to nearly 3,000 sources, including a large number of tanks in the former zamindari areas which had been long neglected and were badly in need of improvement. A scheme of subsidies for the sinking of irrigation wells has been in operation from 1944 onwards and was continued in 1951–52. Extension of time for completing the wells was given from time to time and over 17,000 works were completed during the Plan period. With the winding up of this scheme, more and more stress has been laid on a new scheme of sinking tube wells with filter points. This scheme is becoming very popular, particularly in certain districts where soil conditions are favourable. Nearly 2,000 such wells have been sunk in the State so far and are proving to be of great value as supplementary sources of irrigation in deltaic areas.

Agricultural Production

The bulk of the increase of food production in this State (3·48 lakhs tons in 1954–55) has been achieved by various agricultural schemes such as the supply of improved seeds, use of chemical manures and fertilizers, development of green manure resources, compost making, contour bunding and other soil conservation measures and reclamation and deep ploughing of land by the use of tractors and bulldozers. The quantity of improved strains of paddy seeds supplied to ryots was stepped up to 8,430 tons in 1954–55 and is expected to be well over 12,000 tons during the current year. Over 80,000 tons of Ammonium Sulphate were distributed in 1954–55 and more than 50,000 tons up to the middle of November this year. A scheme for the liberal grant of short-term loans for the purchase of chemical fertilizers is in operation in areas with good irrigation facilities and loans amounting to over Rs. 156 lakhs were advanced to cultivators during the first four years of the Plan period. Soil conservation work has been done on an area of nearly 11,000 acres in Coimbatore district and in small scattered areas elsewhere. The Ketty Valley Pilot Scheme in the Nilgiris has been completed and valuable data have been collected to make it possible to undertake a rapid extension of soil conservation work to cover the major portion of the Nilgiris during the Second Plan period. The production of cotton in 1954–55 was of the order of 2·90 lakhs bales, thanks largely to the area newly irrigated under the Lower Bhavani Project. With the further extension of irrigation under the project and the improvement in cultural practices, it is confidently expected that the target (3·57 lakhs bales) will be achieved during the current year.

As a result of the various irrigation and agricultural schemes referred to above, this State has largely attained a state of self-sufficiency in regard to its requirements of principal food-grains, and more attention may now be devoted to the production of the more valuable forms of food, such as fruits, vegetables, milk and fish, so as to correct the existing deficiencies in the food habits of the people and to evolve a more diversified pattern of agricultural economy. The actual achievements in this regard during the First Five-Year Plan period have not been negligible. The seed depot at Madras and the agricultural staff attached to it are doing very useful work by way of development of Kitchen Gardens in the City and its extensions. The number of institutions for providing facilities

for treatment of cattle diseases has been increased and rinder-pest has been brought under effective control. Four Artificial Insemination Centres in Madras and other bigger towns and 9 key village centres are now working and artificial insemination as a means of improving the quality of livestock is becoming more and more popular. The Madras Milk-Supply Union has nearly reached its target for production of milk, viz., 7,500 Madras measures per day, while there are 19 Milk-Supply Unions and 376 Milk-Supply Societies catering to the needs of the other bigger towns with an average daily production of nearly 30,000 Madras measures. The Karunguzhi Creamery Society produced 3,200 lb. of butter during 1954–55 as against a target of 4,500 lb. A scheme for the utilization of sewage water for growing fodder crops is being undertaken by the Corporation of Madras and arrangements are being made to establish a milk-men colony in the outskirts of the City.

As regards Fisheries, satisfactory progress has been made in the collection of fingerlings and stocking of inland waters and useful work has been done by way of improvement of indigenous craft and tackle and provision of quick transport facilities at certain centres. A cold storage and Fish Freezing Plant has been installed at Mangalore recently and this will go a long way to prevent wastage during peak fishing seasons. A plant for the production of quality fish meal and fish oil is also being established at Westhill near Kozhikode.

Considerable headway has been made in this State in the matter of provision of rural credit and marketing facilities through co-operative organizations and some further progress by way of expansion of the credit movement and conversion of rural credit societies into multi-purpose societies was made till 1953. The withdrawal of various controls during the Plan period made it necessary to give a new orientation to the activities of many societies and the problems of reorganization involved were successfully tackled. Each district was bifurcated into two circles to ensure adequate supervision and efficient working of the various societies. Twenty-five rural co-operative banks are being organized for the issue of medium-term loans for agricultural purposes. A pilot scheme of integrated rural credit and marketing on the lines recommended by the Rural Credit Survey Committee has also been recently sanctioned and will be worked in two taluks in each of the districts of South Kanara, Malabar, Coimbatore, Tirunelveli, Ramanathapuram and Chingleput.

Forests

A number of afforestation schemes have been taken up in the reserved forests and it is anticipated that by the end of the Plan period about 29,000 acres will have been planted up with fuel species, about 2,600 acres with soft-wood and another 4,300 acres with wattle and eucalyptus. It is proposed that teak and other valuable timber trees should be raised on an extensive scale in the forest areas during the Second Plan period and for this purpose experimental plantations are being raised in the Salem district. Systematic soil conservation work in the form of new plantations has been taken up in the low hill areas and about 3,000 acres will have been covered by the end of the Plan period. The 3,000 square miles of panchayat forests taken over by the Forest department are almost completely devoid of tree growth and large extents have also been badly eroded. Various experiments have been conducted to evolve the correct technique to be followed in rehabilitating these forests and working plans have been prepared for some of them. The Government have recently sanctioned a scheme for the establishment in the West Coast of a wood seasoning plant with a saw-mill section and a treating section, for the supply of properly treated and sized timber to artisans. The plant will be run as a State concern on a no-profit no-loss basis.

Power

A rapid advance has been made in the development of Hydro-electric power during the Plan period. The Moyar Hydro-electric Scheme, the Papanasam II Stage Extensions, the Pykara III Stage Extensions and the Madras Plant (Thermal) I and II Stage Extensions schemes have been completed, giving 111,000 K.W. of additional installed generating capacity. An agreement was reached with the Travancore-Cochin State in regard to the royalty to be paid

for the utilization of Periyar waters for generation of electricity and work on the Periyar Hydro-Electric Scheme was commenced towards the end of 1954. This is by far the biggest scheme of its kind, so far undertaken by this State and will be completed in 1958-59, providing an additional generating capacity of 105,000 K.W.

Madras leads all other States of India in rural electrification. By the end of 1954-55, electricity was extended to nearly 2,400 villages and connections given to about 25,000 agricultural pumpsets and about 2,500 rural industries, and it is expected that another 500 villages will be covered and electric connection given to 5,000 more pumpsets and another 500 rural industries during the current year. The availability of cheap power will also give a fillip to the development of larger industries in this State. Already, the cement factories at Dalmiapuram and Mudukkarai, 18 new textile mills and certain other factories for assembling motor cars, manufacture of bicycles, etc., have been added to the Madras grid and power has recently been given to the Integral Coach Factory, Perambur.

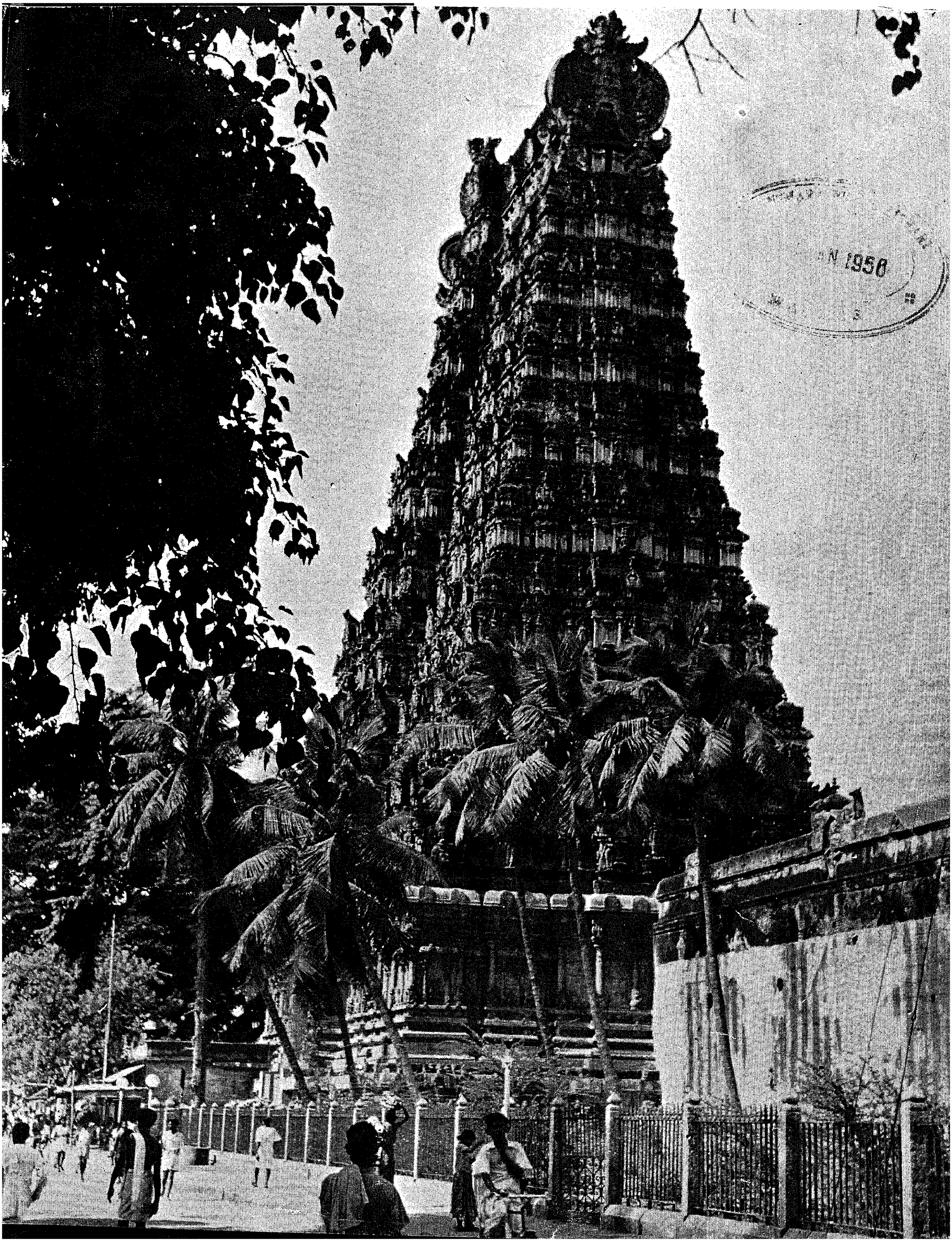
Industries

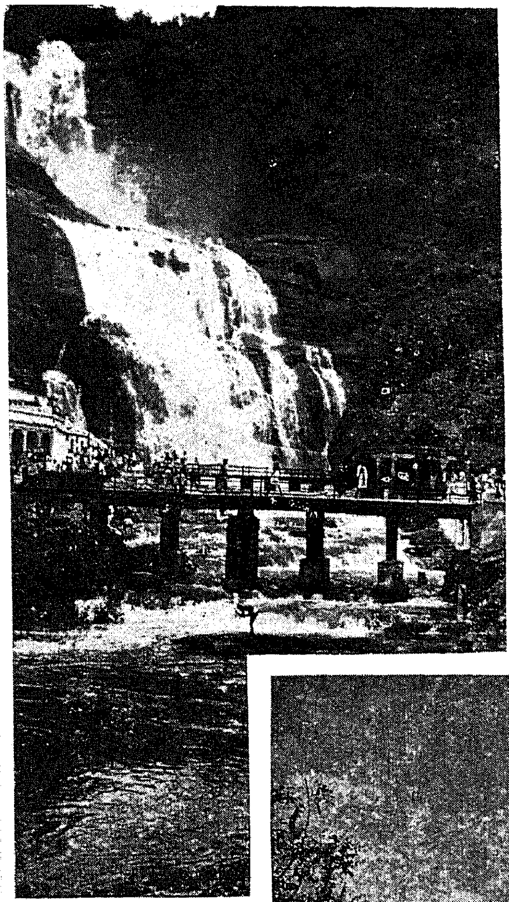
The results of the investigation of the Neiveli Lignite deposits are encouraging and hold out every hope that the mining operations could be carried on profitably. Further investigations and exploitation of the mineral have been taken over by the Government of India. A project report prepared by a British Firm of experts provides for large-scale generation of power, an ammonium-sulphate factory and the conversion of lignite into briquettes for use in boilers and as domestic fuel. A number of subsidiary industries such as manufacture of paints, varnishes, porcelain, etc., could also be started in the area and the project will mark the first big step towards the industrial development of this State. The industrial units actually established during the Plan period, are a hydrogenation factory at Kozhikode for the manufacture of Vanaspathi and refined oil and a silk twisting plant as an adjunct to the Government Silk Filatures, Kollegal. Certain improvements were also effected to the Kerala Soap Institute, Kozhikode and the Government Industrial Engineering Workshops, Madras.

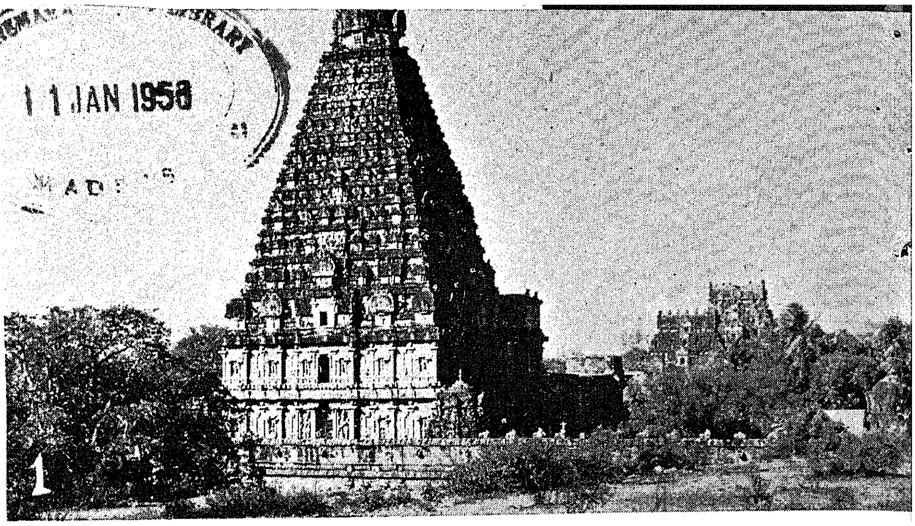
For the rest, attention was mainly concentrated on schemes for training technical personnel. Five polytechnics were opened on a regional basis for providing training in a number of certificate and diploma courses and arrangements for imparting advanced instruction in leather tanning and leather goods manufacture were made in the reorganized Institute of Leather Technology. A chemical testing and analytical laboratory was established for analysing minerals and other raw materials available in this State. To provide the overall facilities required by private industrilists for the development of small-scale industries, it is proposed to open an Industrial Estate at Guindy during the current year. The Estate will cover an extent of 40 acres with 100 structures to be used as factory premises. Other facilities required such as water-supply, electric connection, etc., will also be provided.

Substantial results have been achieved under the Khadi Development scheme. The scheme now provides employment for 60,000 spinners and nearly 1,800 weavers and the actual production of Khadi has exceeded 50 lakhs yards as against the target of 45 lakhs yards fixed for the five-year period. With the liberal assistance now given from the Cess fund, the development of the Handloom industry has also been put on a satisfactory basis. Out of 4·20 lakhs of active looms in this State, it is expected that 1·6 lakhs will be in the co-operative fold by the end of the current year and the value of the cloth produced by weavers' societies has gone up from Rs. 18 lakhs a month to Rs. 32 lakhs a month within about a year. Various steps have been taken to improve the technique of production and to build up an effective marketing organization. A calendering plant is being installed at Erode to give a better finish to handloom cloth and enable it to compete on even terms with mill cloth. The scheme for the development of the Palm Gur industry by organizing co-operative societies for the benefit of ex-tappers and giving them training in improved methods of jaggery production has been working well; targets of production are fixed every quarter and have generally been exceeded.

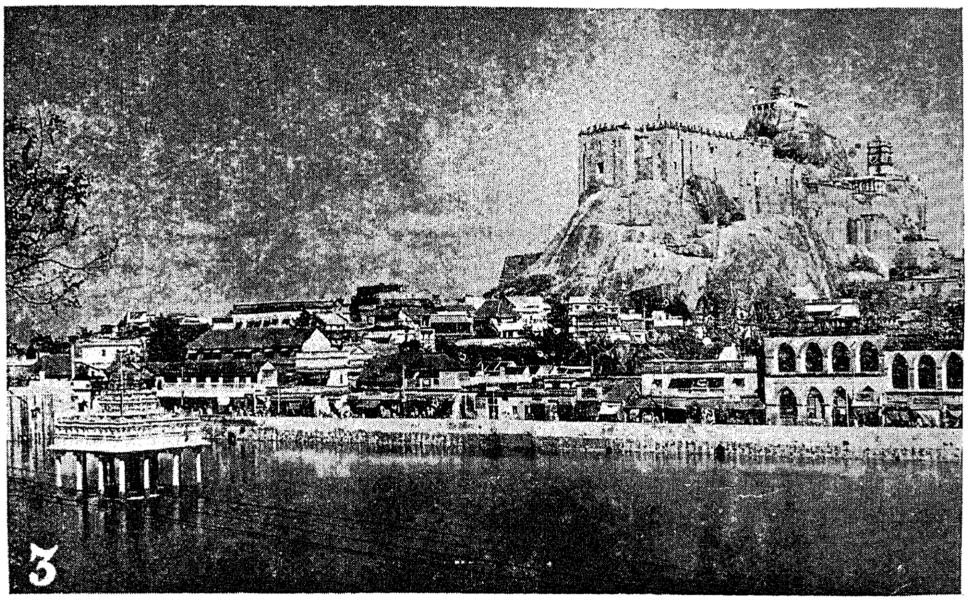
On the Opposite page—Madurai Temple.







11 JAN 1958
MADRAS



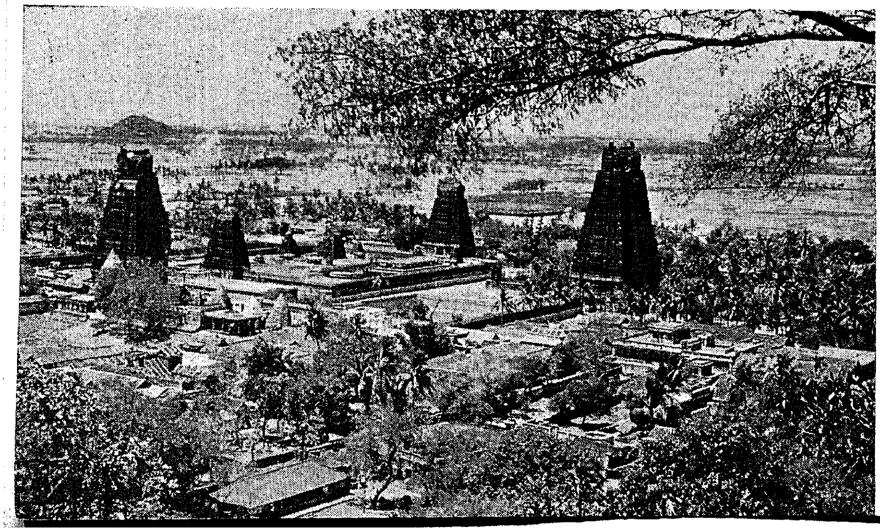
1. Tanjore Temple.

2. Courtallam Falls.

3. Rock Fort Temple. Tiruchirappalli.

Kalyana Sundarar—Stone-carving, Madura Meenakshi Temple.

Tirukalikundram, a general view.



Highways

Nearly 1,500 miles of new roads have been formed so far mostly for giving connection to villages and various improvements have been effected to a length of about 2,100 miles of roads. Excluding works on National Highways, 55 major and 211 minor bridges have been completed. The West Coast road connecting Bombay to Cape-Comorin is being developed as an all-weather road and the programme of work in this State consists of the asphaltic surfacing of a length of 321 miles and the construction of 23 major birdges. Twenty-one works including some important Ghat roads in Malabar, Coimbatore and Madurai districts and some major bridges like the bridge across the Ponniar near Thirukkoilur and bridges across various streams in the South Kanara district are being executed out of the Government of India's grant for roads of Inter-State and economic importance. Among the various improvements effected to National Highways, special mention must be made of the bridge across the Palar near Chingleput on the Great Southern Trunk Road, which is the first pre-stressed concrete road to be constructed in India and one of the longest of its kind in the world. The construction of a similar bridge across the Coleroon on the Chidambaram-Shiyali road is making good progress.

Education

Owing to budgetary difficulties, only 200 new elementary schools were opened up to 1954–55. In that year, however, 2,775 single-teacher schools in school-less centres were opened under a special scheme sanctioned by the Government of India for giving relief to the educated unemployed. The buildings for these schools were in most cases offered free by the villagers. Additional teachers are being employed in these schools and more single-teacher schools opened in the current year. These will provide employment for 2,000 more teachers and by the end of the year we will have reached the satisfactory position of having at least one elementary school in every village in the State, with a population exceeding 500. At present, 55 per cent of the children in the age group 6–11 and 28 per cent of the children in the age group 11–14 are attending schools and this compared very favourably with the averages for the whole of India. Elementary schools are being converted into basic schools according to a systematic programme.

As regards Secondary Education, steady progress is being made by way of conversion of existing secondary schools into multi-purpose ones, opening of more courses, improvements to libraries and facilities for craft training. An important advance in the provision of free education has been made this year and all poor children without distinction of caste, creed or community, have been exempted from the payment of school fees up to the middle school stage.

Health

The progress made in medical education and practice in this State has won the appreciation of the W.H.O. Team of medical scientists who visited the State in 1953. The Madurai Medical College was opened in 1954–55 with provision for 65 students against a final target of 100. Various improvements have been effected to the Stanley Medical College and Hospital, Madras, and to a number of other district and taluk headquarters hospitals and the bed strength in these hospitals has been increased by nearly 1,600. Eleven local fund institutions have been taken over and 26 primary health centres have been opened so far during the Plan period. Splendid work is being done for the control of malaria and by the end of the Plan period, all the malarial areas in this State will be under control.

The provision of drinking water in rural areas has been pushed through vigorously and 7,600 well works have been completed during the first four years in addition to a number of wells for the benefit of Harijans. Three thousand more wells are likely to be completed during the current year. The progress in regard to Urban water-supply and drainage has however not been quite satisfactory mainly due to difficulties in obtaining materials, and only seven schemes have been completed so far and two are nearing completion. Seventeen schemes are in progress and the tempo of execution is being speeded up.

Housing

This is the field in which a good deal remains to be done and the only substantial achievement has been the construction of about 2,800 houses by Urban Housing Societies up to the end of 1954-55. The results in rural areas are however very discouraging and only 36 houses have so far been provided by rural housing societies. Local contributions will necessarily have to play a vital role in any scheme for the improvement of housing conditions in rural areas and it is also important that local materials should be used to the maximum extent possible and the fullest co-operation enlisted between the poorer and the more well-to-do sections of the villagers. With the new impetus in these directions given by the Community Development and the National Extension Service movement, satisfactory results may be expected during the next Plan period.

Amelioration of Backward Classes

There has been a large expansion of the various special measures undertaken by the Harijan Welfare Department for the benefit of Harijans, Scheduled Tribes, Ex-criminal Tribes and other Backward Classes. Numerous co-operative societies have also been organised for improving the economic condition of these classes. There are now over 1,200 special schools maintained by the Department with a total strength of over 1 lakh pupils. About 16,000 scholarships are given in these schools and free midday meals are supplied to about 75,000 pupils. Nearly 32,500 Harijan families have been provided with house-sites during the Plan period and 624 wells have been newly sunk or repaired. A number of special schemes are also being implemented to bring about a change in the attitude of the general population and to eradicate untouchability.

Community Development and National Extension Service Schemes

The National Extension Service and the Community Development Programmes now cover the equivalent of 79 blocks in the State (4 Community Projects, 24 Community Development Blocks and 38 National Extension Service Blocks) with a population of about 85 lakhs out of the total rural population of about 290 lakhs. The main objective of the movement may be said to be the initiation of habits and methods which would ultimately enable villagers to maintain, by their own efforts, a progressively rising standard of life. The extent of people's contributions to the various development works in the villages is therefore a measure of the success achieved by the movement. The average contribution per head in Madras is not yet so high as in some other States; but the people's response has been enthusiastic and excellent work has been done in some villages and their example will no doubt inspire many others as the movement gains momentum.

The criticism has sometimes been made that the First Five-Year Plan has not materially improved the standard of life of the people or the living conditions of the vast majority of the agricultural population. This is no doubt largely true and there are also disquieting signs of increasing unemployment, particularly in urban areas. But the Plan was primarily intended to meet the particular situation created by the conditions prevailing in the country at the time it was framed and within its limited objectives, it has achieved a very fair measure of success. The battle on the food front has been won and this has been of very great help in bringing inflation under control and evolving fairly stable conditions in the industrial and other sectors. While the actual progress made in certain directions has not been inconsiderable, the greatest achievement of the Plan is the change it has brought about in the outlook of the people. There has been a wide awakening in the country-side and the idea of planning for prosperity has permeated to every nook and corner. The people have gained confidence in themselves and the spirit of self-help which is so essential to bring about an improvement in the rural economy is more and more in evidence. These are basic requirements for any scheme of democratic planning and with the experience gained and the building up of the requisite administrative machinery, the First Plan may be said to have laid the foundation for 'bigger and bolder' plans in future to tackle the major problems of poverty and unemployment.

1 JAN 1958
MADRAS

Agriculture Under the Second Five-Year Plan

M. BHAKTHAVATSALAM,
Minister for Agriculture.

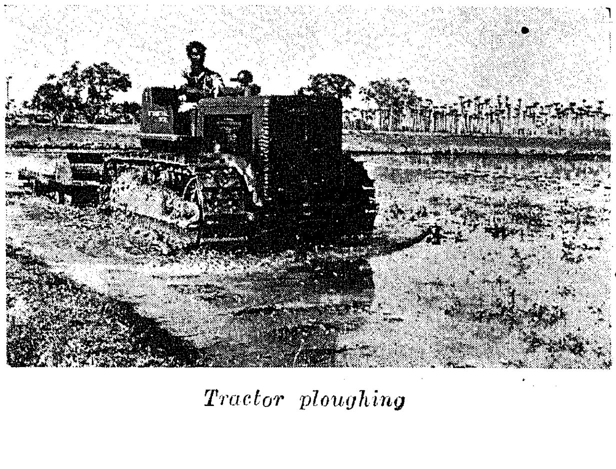
BEFORE proceeding to give an outline of the Agricultural Schemes in the Second Five-Year Plan, let me assess briefly what we have been able to achieve in the field of agriculture during the First Five-Year Plan period which is coming to a close. The first and foremost achievement is the considerable success that has attended our efforts to meet our food requirements ourselves without looking to external aid. Though there is no doubt that this was largely facilitated by the improved seasonal conditions during the Plan period, it can be said and we can justly be proud of the fact that a substantial portion of the increased food production was undoubtedly due to the special measures undertaken under the Plan.

Assured Water Supply

Our experience in recent years has shown that the most serious obstacle that has stood in the way of our agriculturists maximising agricultural production has been their complete dependence on the uncertain incidence of the monsoons. Thus an assured supply of water for cultivation has been the primary need of the agriculturist. Primary importance was therefore given in the First Five-Year Plan of this State to this item and nearly 25 per cent of the entire total outlay under the Plan was for the execution of major irrigation projects like the Lower Bhavani, the Malampuzha, the Manimuthar, the Araniar, the Walayar, the Amaravathi, the Krishnagiri and other projects. The Lower Bhavani and the Malampuzha projects have already commenced supply of water and the others are in various stages of progress.

In addition, innumerable minor irrigation works and tank-improvement schemes in all areas including the ex-Zamindari areas have been executed under the First Five-Year Plan. Steps have also been taken to develop and utilise the underground water resources. A scheme known as the Filter point Tube-well Scheme providing for the construction of tube-wells with filter-points so as to provide water during summer months to help the expansion of the cultivation of paddy and of cotton and other crops during the off-season in the rice fallows of the deltas was launched in 1951–52. The wells sunk under this scheme during the years 1953–54 and 1954–55 were 525 and 895 respectively and they exceeded the targets by 125 wells and 295 wells respectively which shows the immense popularity of the scheme.

Increased irrigation facilities are also provided for the ryots under the oil engine pump-sets and electric motors hiring and hire-purchase schemes. Under the hiring scheme 1,726 oil engines and 411 electric-motors, capable of irrigating 16,600 acres and yielding an additional production of 8,300 tons of foodgrains every year were hired out to



Tractor ploughing

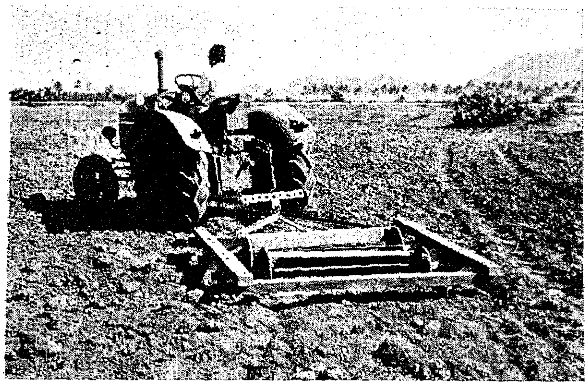
9

ryots. The popularity of the scheme was increased after the oil engine pump-sets which had been located previously at the district headquarters were stationed some time ago at the taluk headquarters in order to avoid the unnecessary movement of the engines over long distances. Under the hire-purchase scheme, the Agricultural Department has distributed up to 30th September 1955, 1,304 oil engines and 581 electric-motors to middle class agriculturists and it has been estimated that these machines have accounted for an increase in the production of foodgrains by about 7,000 tons.

Seeds and Manures

Next to water, the ryots need improved seeds and manures. Under the scheme for the distribution of improved seeds in the First Five-Year Plan, 8,430 tons of improved paddy seeds were supplied to the ryots during the year 1954–55 against a target of 6,760 tons. Under the scheme for the distribution of ammonium sulphate, 79,306 tons were distributed during the year 1954–55.

Due attention is also being paid to the development of our green-manure resources. Green manures besides being relatively far cheaper than chemical fertilisers, supply the organic matter necessary for pushing up the yield of crops and building up soil fertility. Under the scheme for the distribution of green manure seeds in the First Five-Year Plan, the targets fixed for 1954–55 were exceeded and the targets fixed for 1955–56 are expected to be achieved in full.



Tractor attached with 'undaka' in a wet field

Urban compost which is another valuable source of manure is also being developed. A total quantity of 251,093 tons were produced during the year 1954–55 as against a target of 300,600 tons. There is also a Rural Compost Scheme under which 136,000 tons of compost were produced during the year 1954–55.

Mechanical Aids

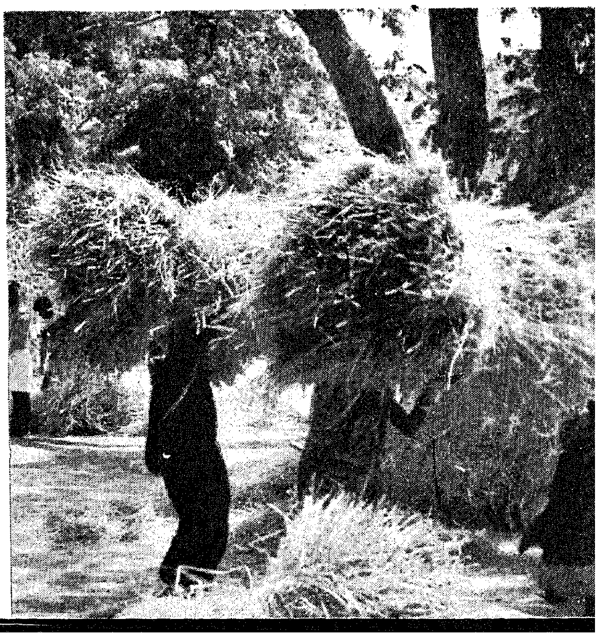
There is provision in the Plan for making mechanical aids for cultivation available to the agriculturists under the Tractor Hiring Scheme and the Tractor Hire Purchase Scheme. There are now 158 tractors in this State, out of which, 85 are provided with bull-dozer attachments. The contribution to increased production of these tractors and of the thirty-eight tractors with matched implements which were supplied to the ryots under the hire-purchase scheme is estimated at nearly 6,000 tons of foodgrains in each year.

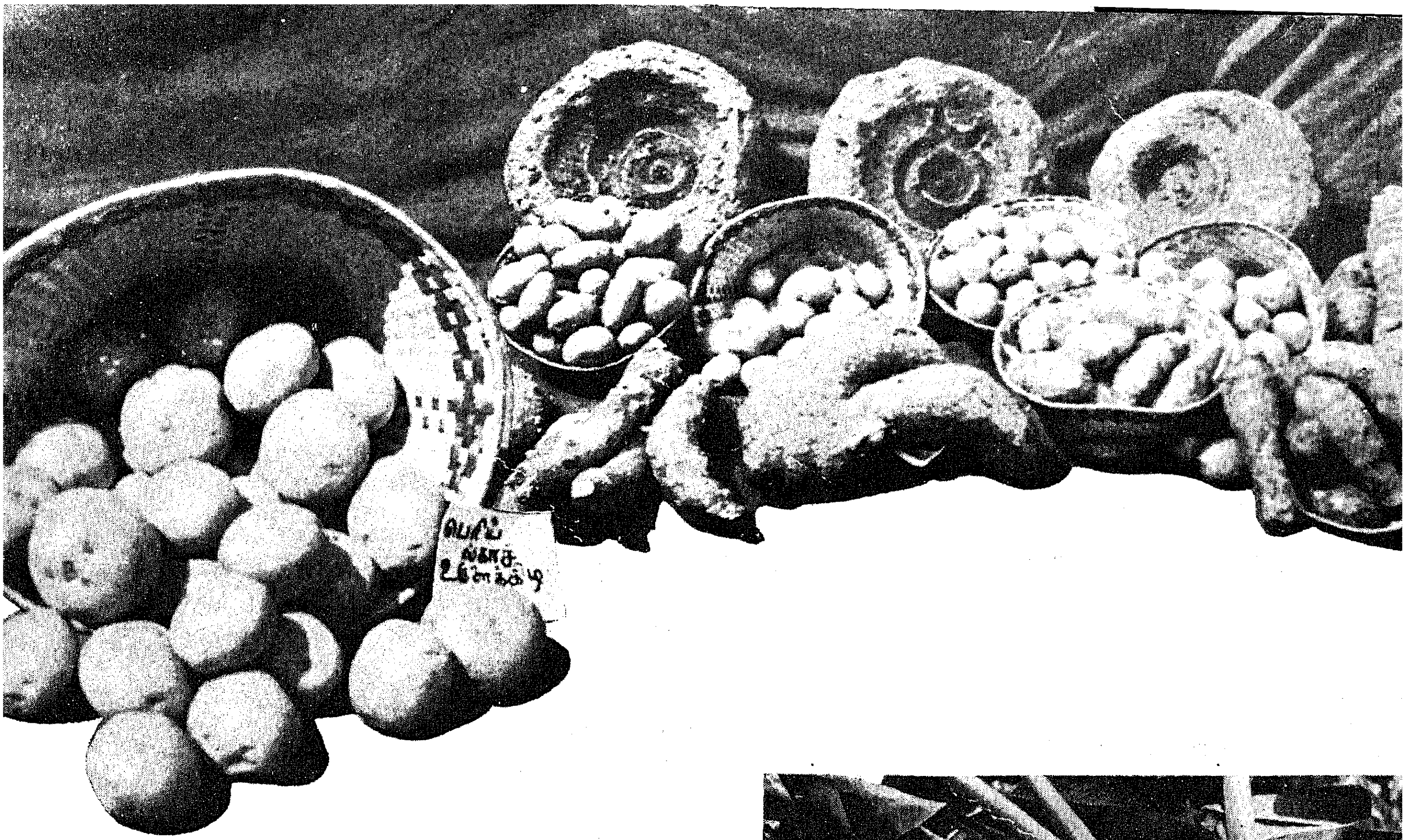
Plant protection work is also a chief item in the Plan. During the year 1954–55, crops over an area of 300,000 acres were treated and about 136,000 fruit and economic plants were treated and a quantity of 32,380 tons of foodgrains were saved.

Special attention is being paid under the Plan to increasing the production of cotton and sugarcane. As a result of the measures taken there was an increase in cotton production to the tune of nearly one lakh bales till 30th September 1955 while the additional production of sugarcane by the end of 1955–56 is expected to be 87,000 tons.

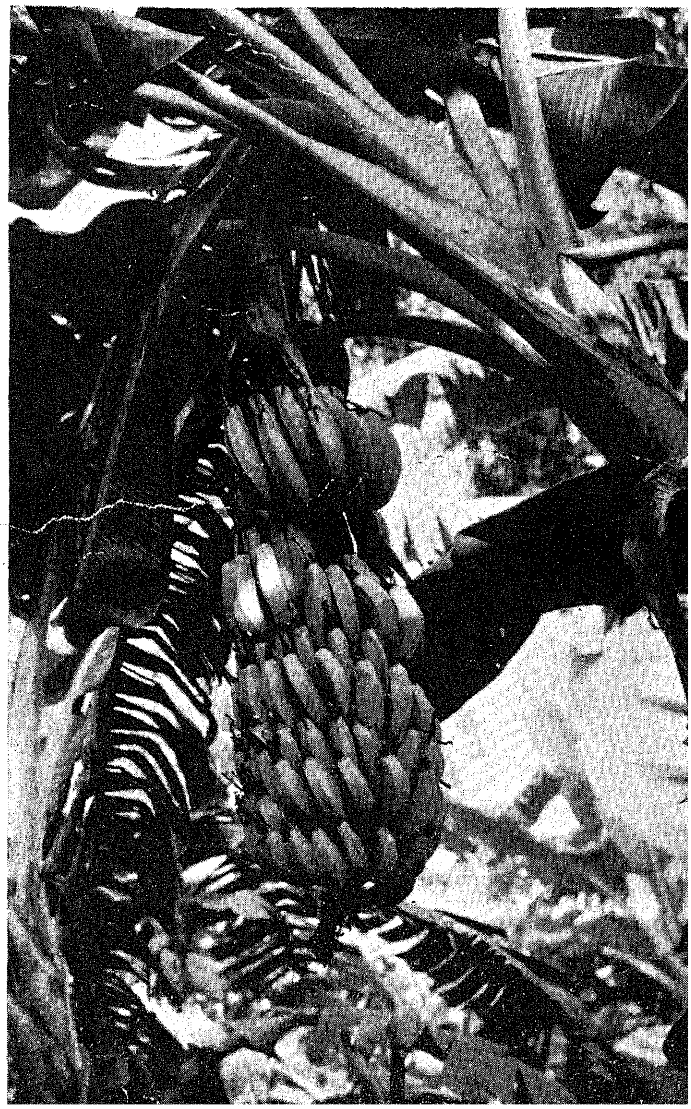
Agricultural development is the dominant activity in the Community Projects and National Extension Service Scheme which is one of the main planks of the First Five-Year Plan. The Plan envisages the covering of one-fourth of the population by the end of the Plan period, i.e., by 31st March 1956. This target has already been achieved in this State. With a view to increase the rice surplus of the Tanjore district by 75,000 tons a special National Extension Service scheme employing much more than the normal agricultural staff was launched in two revenue divisions of that district to begin with. An additional production of 20,000 tons of rice is expected even in the first year of the working of this scheme in these two divisions alone.

FOR BETTER YIELD
FROM MOTHER EARTH!





NATURE'S OFFERINGS!



Our schemes for inclusion in the Second Five-Year Plan of our State have been drawn up in the light of our experience in regard to the First Five-Year Plan. As the country has now largely fulfilled one of the principal objectives of the First Five-Year Plan and attained a measure of self-sufficiency in regard to its food requirements at the present levels of consumption, the emphasis in the Second Five-Year Plan will be shifted to Industries so as to help in providing larger employment opportunities and improving the general standard of living of the people, although agriculture will undoubtedly continue to receive its due share of attention. The National Extension Service Scheme, of which, as I have already said, agricultural development is the dominant activity, will be extended to the whole State by the end of the Second Five-Year Plan period.

Schemes under the second Plan

The Second Five-Year Plan schemes have not yet been finalised. But as they stand at present, a total net amount of Rs. 1,307·62 lakhs is proposed to be spent for Agricultural Schemes during the Second Plan. The schemes are broadly classified under two heads. The first falling under the group "running schemes", i.e., those that were taken up during the First Five-Year Plan and are to be further intensified and continued during the Second Five-Year Plan. The second part of the Plan deals with the schemes newly taken up, i.e., schemes proposed to be launched during the Second Plan period. The total expenditure provided under the Plan is proposed to be spent every year under the various schemes as detailed below :—

Expenditure in lakhs of Rupees.

Year.	*Agricultural Schemes including Minor Irrigation Projects.*	*Land Development including Soil conservation.*	*Development of integrated rural credit and co-operative marketing of agricultural produce, etc.*	*Total.*
	RS.	RS.	RS.	RS.
1956–57	140·47	33·40	83·62	257·49
1957–58	137·20	38·90	83·81	259·91
1958–59	144·77	44·40	63·13	252·30
1959–60	155·18	49·90	55·62	260·70
1960–61	162·41	55·40	59·41	277·22
	740.03	222·00	345·59	1,307·22

The agricultural schemes aim at a target of additional production of foodgrains of about 6 lakhs tons by the use of manures and fertilisers and improved seeds, and of over one lakh tons by minor and major irrigation schemes. The area under improved varieties of paddy will be stepped up from 2·6 million acres to 5·1 million acres by the end of the Plan period and the aera under improved millets from 0·5 million acres to 2·6 million acres. Similarly, the area on which green manures are used will be increased from one million acres to 2·5 million acres and the quantity of Ammonium Sulphate used for cereals

Lift irrigation

from 0·66 lakh tons per year to 1·50 lakhs tons per year. A new scheme is the opening of State Seed Farms of about 25 acres each in the various National Extension Service and Community Project Blocks. It is proposed to open 400 seed farms during the Plan period. They will, in all, produce, 2,000 tons of primary seeds, 400 tons of millets and sufficient nucleus seeds of groundnuts, cotton and disease-free sugarcane setts, which, on further development, will be sufficient to saturate the entire State with improved varieties. The work of plant protection will be intensified by the opening of four regional centres at Tanjore, Coimbatore, Madurai and Madras where sufficient equipment and pesticides will be stocked to deal with large-scale outbreaks. This will be in addition to the normal equipment available with the district staff and the regional unit which the Government of India propose to maintain entirely at their cost.

Sugarcane

As regards sugarcane, the existing production of 35 lakhs tons of cane per year will be increased to 45 lakhs tons in 1960-61 and it is proposed to increase sugar production from 30,000 tons to 90,000 tons per year. It is expected that the requisite number of additional sugar factories will be licensed during the Second Plan period. The present production of cotton in this State is 2·95 lakhs bales and a 31 per cent increase proposed in the All-India Plan will work out 91,000 bales. Against this target, the Madras Plan will give an additional production of 1·05 lakhs bales per year, the increase being achieved mainly by increase of irrigated area under the Lower Bhavani Project and partly by the extension of high yielding strains, inter-cropping, cultivation in rice fallows and application of fertilisers. Every effort will be made to increase the production of oil-seeds in the State. The present production of 0·84 million tons will be stepped up to 0·98 million tons.

Cotton field

The existing coconut nursery schemes will be expanded to increase the output of seedlings from 90,000 to 2 lakhs. A Regional Coconut Research Station will be opened in the Tanjore district. On the horticultural side, it is proposed to have a model orchard-*cum*-nursery in each district and at the end of the Plan period 5 lakhs of plants will be distributed to cover an area of 10,000 acres. It is expected that these centres will also serve as demonstration units of modern scientific horticulture.

Soil Conservation

Soil conservation work on dry lands will receive special attention during the Second Plan period though the actual area to be tackled has had to be considerably reduced so as to bring the cost down to the limits indicated by the Planning Commission. Soil conservation schemes will be taken up in about half the cultivated area in the Nilgiris (i.e., about 25,000 acres), about 1,250 acres in Kodaikanal and some of the problem areas (covering an extent of about 36,550 acres) in other districts. In addition, steps will be taken to encourage the cultivation of tea and commercially valuable trees like wattle and blue-gum on the steeper slopes in the Nilgiris.

The Wynaad Land Colonization Scheme will be continued during the Plan period and more land will be developed by forming new colonies including colonies of aboriginal tribes. Proposals to settle 200 demobilized personnel in the area are already pending. In addition, a new Colonization Scheme to bring under cultivation an extent of about 1,600 acres in the Attapadi Valley at a cost of Rs. 20 lakhs has been included in the Plan.

New Schemes

Among the noteworthy new schemes are those relating to the development of cashew, pepper and areca. The schemes provide for research on cashew and expansion of area under cashew both

Soil conservation—Bench terraces

in the plains and in the forests. The production of pepper will be increased by distribution of vines from prolific bearers and by extending cultivation in all suitable areas including new forest areas. The production of areca will be increased by improving the irrigation facilities and manuring and by supply of seedlings for extension to new areas.

Research schemes will be undertaken in respect of tobacco, betel vine and gur manufacture and storage. The aim of the scheme relating to tobacco is to improve the quality of Meenampalayam tobacco in Coimbatore district by adopting the Jaffna method of curing and increase the production by 2,500 tons. As regards betel vines, one acre of land in Salem district will be taken on lease for finding out the most effective remedial measures to combat the betel vine wilt which has been widely prevalent in large areas in the Salem and Tiruchirappalli districts. Under the scheme relating to gur, scientific data will be collected and ryots will be advised regarding the proper manufacturing process to be adopted for the preparation of gur of good keeping quality and regarding the proper method of storage to be adopted for preventing deterioration in quality during storage.

All these new items of work will require a large number of qualified personnel and provision has therefore been made for increasing the strength of the Agricultural College, Coimbatore, to 162 students from the present strength of 108 students every year. The Agricultural College and the Research Institute attached to it will also be upgraded and increased facilities for research will be provided therein. A Statistical Section has already been constituted and in addition spectrographic and X-Ray equipment as also additional farm and laboratory equipment will be provided.

Finance and Marketing

Due attention has also been paid to the important items of agricultural finance and marketing. There can be no better incentive to the farmer to go all out and produce all he can and no better means of securing his full and willing co-operation in achieving the targets of agricultural production fixed in the Plan than assuring him a reasonable return for his efforts and exertion. The fall in prices which agitated the minds of the agriculturists about this time last year has luckily been arrested. But it helped to focuss attention on the need for providing the agriculturist with enough credit and marketing facilities to enable him to hold on to his produce and sell it if and when he gets a reasonable price instead of being practically compelled as at present to part with his produce as soon as it is harvested. A permanent solution must be found for this old problem. Schemes have therefore been included in the Second Five-Year Plan for the expansion of co-operative credit and marketing and for bringing about a full co-ordination between credit and other economic activities especially marketing and processing.

The scheme in the Plan for the development of integrated rural credit in the Madras State envisages among other things the supply of at least 20 per cent of the credit needs of the agriculturists by co-operatives during the fifth year of the Plan. It seeks to cover 75 per cent of the

Tapioca peeling

villages and serve 50 per cent of the rural population by co-operatives by the fifth year of the Plan.

Under the scheme for the development of co-operative marketing of agricultural produce that has been included in the Plan it is proposed to establish 30 primary marketing societies in addition to the existing 120 such societies so as to cover the entire State. The object of the scheme is to put up a net-work of godowns in all important market centres for providing storage and market facilities. At the end of the Plan period it is expected that these marketing societies will handle about 10 per cent of the marketable produce of the agriculturists.

Integrated Rural Credit

In view of the importance attached by the Government to the problem of agricultural finance and marketing they have already sanctioned a pilot scheme of integrated rural credit and marketing costing Rs. 8.34 lakhs which it is proposed to launch before the end of this month in 12 taluks in six districts of the State. This scheme which is part of the programme drawn up for the Second Five-Year Plan for the expansion of co-operative credit and marketing referred to in the preceding paragraphs envisages the establishment of 12 large-sized primary credit societies at the rate of one in each of the 12 taluks for supplying short and medium-term agricultural credit and developing marketing of agricultural produce through marketing societies and also the development of the loan transactions of the existing rural credit societies and primary land mortgage banks, etc. The large-sized primary credit societies, the existing rural credit societies and the primary marketing societies will construct 14 godowns of different capacities at a total cost of over rupees three and a half lakhs which will be provided by the Government one half as loan and the other half as a subsidy.

Our programme of work in the sphere of agriculture under the Second Five-Year Plan is thus well-balanced and full of potentialities. If the public extend their co-operation fully and wholeheartedly we cannot only achieve but even exceed the targets fixed under the Plan. There is no doubt that such co-operation will be forthcoming, because the First Five-Year Plan has been implemented enthusiastically not as a mere Government Plan but as a People's Plan and the Second Five-Year Plan also will be worked in the same spirit and I am sure with better results.

Irrigation Projects

U. ANANDA RAO,
Chief Engineer (Irrigation).

THE art of Irrigation Engineering is no new venture in the State of Madras. Irrigation for increasing the yield from soil dates back to the era of Chola kings and the benefits have been enjoyed by large tracts in the various districts. Even during the days of foreign rule lasting well over 150 years, irrigation works in this State were constructed in the form of anicut systems along the major river basins and these works being mainly commercial ventures with assured return on the capital, it may not be incorrect to surmise that there had been no planned development of irrigation with due regard to the necessities of individual areas and it was only after the Nation gained independence that National Development in the form of a Planned Programme came into being. In the State of Madras at the time of independence in 1947 a few irrigation schemes were under construction and these were taken up under the post-war reconstruction programme. The launching of the First Five Year Plan helped to make a rational study of the availability of water resources and the needs of the various regions and the tempo of construction on the projects on hand were speeded up.

First Five-Year Plan

The First Five Year Plan of Madras State provides for the construction of the following major irrigation projects :—

	Name of the project.	Cost in lakhs.
1	Lower Bhavani Project	1,000
2	Malampuzha Project	528
3	Mettur Canal scheme	245
4	Manimuthar Project	505
5	Araniar Project	104
6	Walayar Project	100
7	Mangalam project	89
8	Sathanur Project	289
9	Krishnagiri Project	202
10	Amaravathi Project	297
11	Vaigai Project	330

Among these, the last four projects which were originally intended for the Second Five Year Plan were taken up during 1954 to accelerate the development of irrigation and these will be continued during the Second Plan period.

Lower Bhavani Project

Of these projects, the Lower Bhavani Project is the biggest costing Rs. 10 crores. The dam is across the Bhavani a tributary of Cauvery and is 5½ miles long. The area of water spread when the reservoir is full is 30 square miles. The dam consists of both earth and masonry sections, this being the first earthen dam of over 100 feet height to be built in India. The completion of this huge dam in such a short time was made possible by the use of earth moving machinery on a large scale. The modern practice of passing the floods over the dam itself instead of at the flank has been incorporated in this design. The main masonry dam rises to a height of 140 feet above the river bed and the floods can be passed over the dam itself which is designed to allow for the free flow of water. The main canal on the right side is 124 miles long and will irrigate 207,000 acres of land of half cotton and half millets in the Coimbatore and Tiruchirappalli districts. This project envisages growing crops other than rice. The work on this project is practically over and a large area has already been brought under cultivation during the last two years.

Malampuzha Project

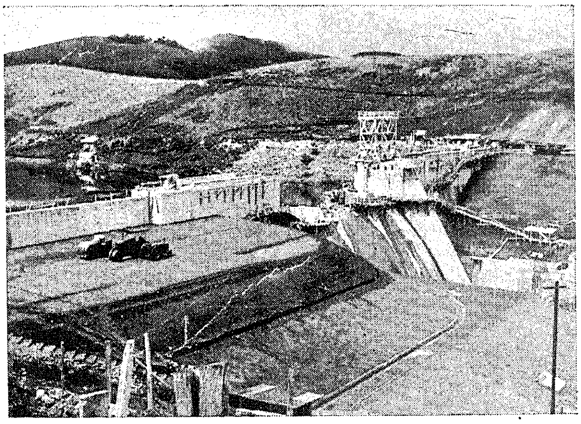
The next major project the first stage of which was completed a few months back is the Malampuzha Project in Malabar district for the benefit of Palghat taluk. The dam located 5 miles east of Palgaht town is across the river Malampuzha which rises in the Western Ghats. Even though this area receives an average rainfall of 80 inches the rainfall is so unevenly distributed, that for want of wetting or two, the ryot helplessly witnesses the failure of his crop to mature. More often than not, only one crop is successfully harvested. The heavy rainfall combined with the very uneven contours of the country have contributed to the non-execution of any irrigation schemes in this region till now. But the acute food problem and the district becoming highly deficit in rice have contributed to the immediate taking up of two more schemes, viz., Walayar and Mangalam and some more are proposed in the Second Plan.

The Malampuzha Dam which is 100 feet high above the river bed is 6,066 feet long and helps to store the supplies of the river in a beautiful lake surrounded by picturesque slopes of Western Ghats. This lake covering an area of 9½ sq. miles will feed and stabilise the I and II crops of rice on an area of 46,000 acres and a new III crop can be raised on an area of 16,000 acres. Even before its completion the project was opened for part irrigation in 1953 and 1954 and in September this year 35,000 acres were benefited by the project. The project as sanctioned in 1949 provided for the formation of the reservoir and the construction of the left main canal system feeding 40,000 acres at a cost of 445 lakhs. Subsequently to extend the benefits of irrigation to the area lying on the right side of the Malampuzha river the Government sanctioned the Right side canal scheme to benefit an area of 6,000 acres at a cost of Rs. 83 lakhs. This scheme was launched this year and will be completed during the Second Five Year Plan period.

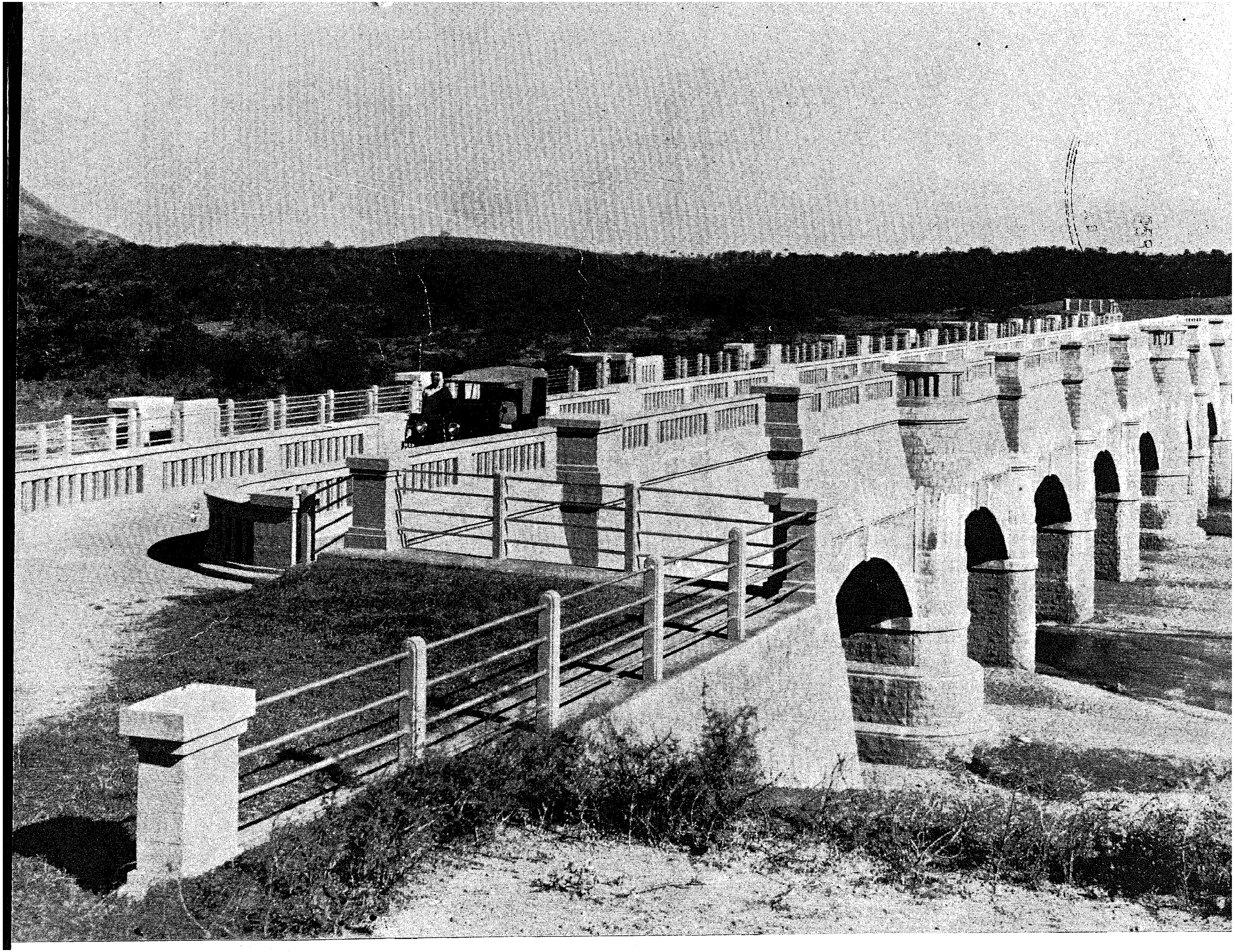
The formation of a storage reservoir across the Manimuthar river 3½ miles upstream of its confluence with the Tambraparni river is envisaged in the Manimuthar Project. The capacity of the reservoir will be 4,059 M.cft. up to the crest of the spillway and 5,511 M.cft. with 15 feet high lift shutters over the crest of the spillway. The reservoir so formed will (i) supplement the supply of water to the existing ayacut of 83,000 acres under the Thambraparni system and (2) supplement supply to the existing ayacut under the several rainfed tanks in Tirunelveli district with a total ayacut of about 20,000 acres. The total length of the dam is 11,380 feet of which 1,230 feet will be of masonry in the spillway portion located in the river reach and the remainder will be of earth. This project costing 505 lakhs is in an advanced stage of construction and the benefits are expected to accrue by the end of this year.

Mettur Canals Scheme

The Mettur canals scheme located in Salem district consists of the excavation of a canal from the High Level sluice of Mettur Reservoir which will run for about 27 miles and irrigate 17,000 acres in Coimbatore district and 1,000 acres in Salem district. Supply will also be tapped from the low level vent of Mettur reservoir when necessity arises. At about the 4th mile of the west bank canal, a branch will take off and run for about 40 miles after crossing the Cauvery by a pressure aqueduct. This will irrigate 27,000 acres in Salem district. The total irrigation under the two canals will be 45,000 acres and will consist of 22,500 acres of dry and 22,500 acres of wet crops in alternate blocks in alternate years. The work on the scheme is mostly complete and the canals are ready to irrigate the entire ayacut in the coming season according to the availability of water from the Mettur Reservoir.



Pykara Dam



Malampuzha Project—Korayar Aqueduct

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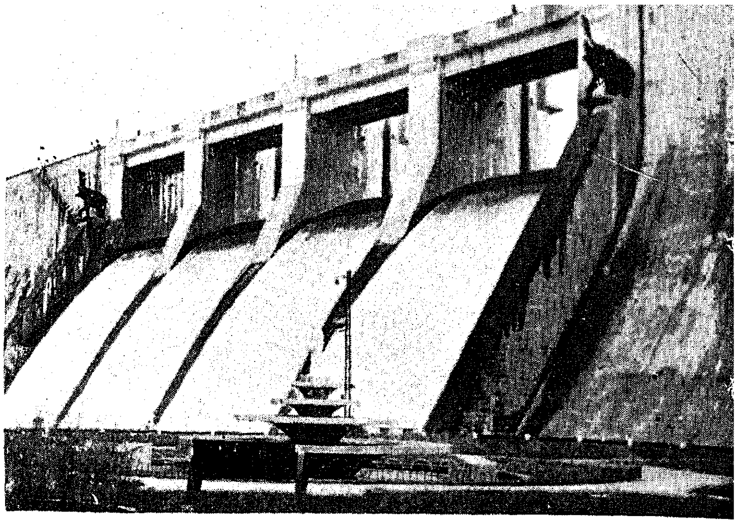

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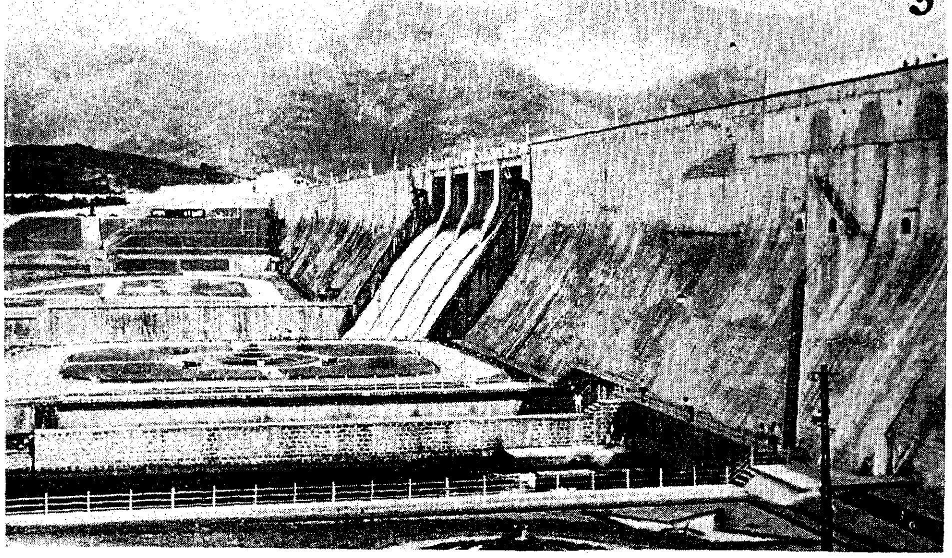
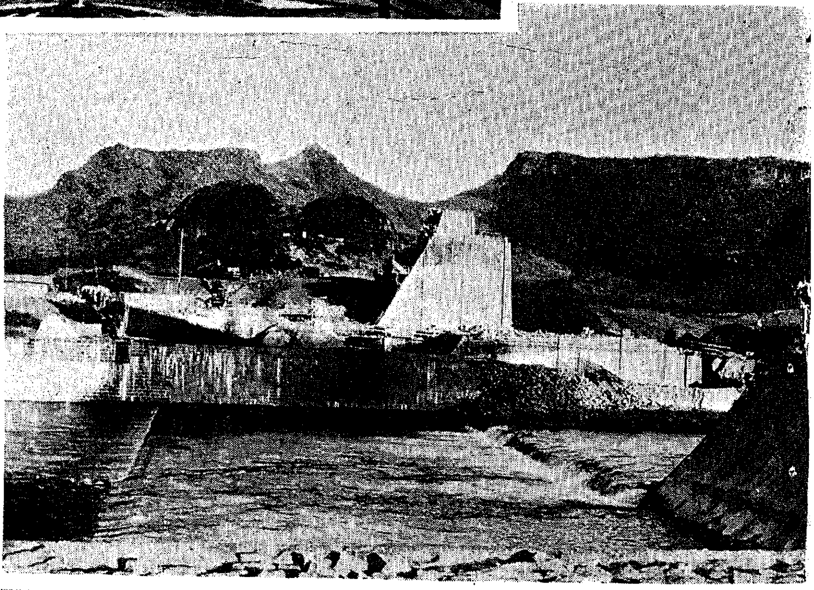


OUR IRRIGATION PROJECTS

1–3. Malampuzha.
2. Lower Bhavani.
4–5 Manimuthar.



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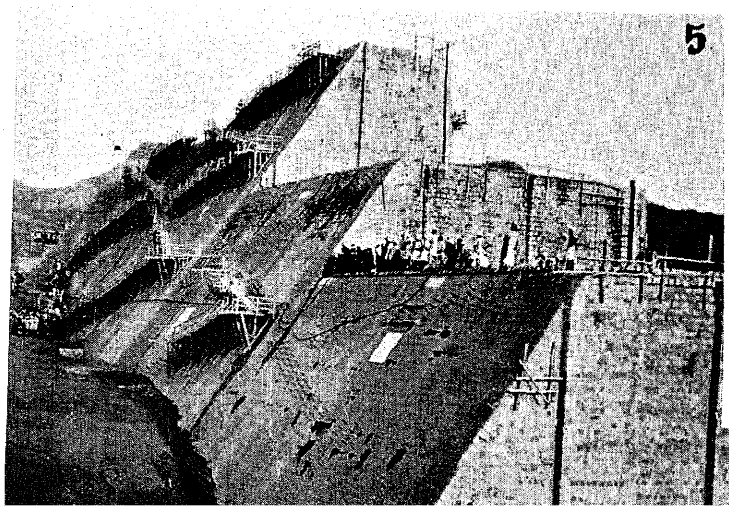
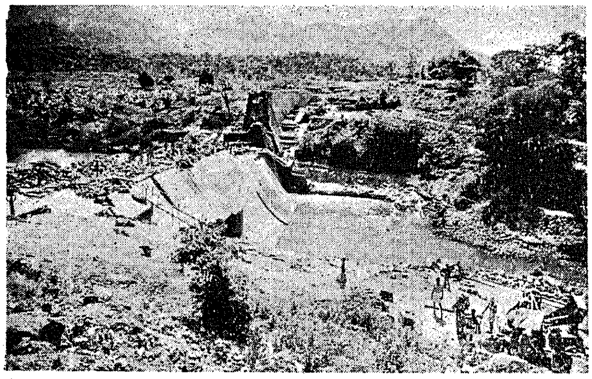


Araniar Project

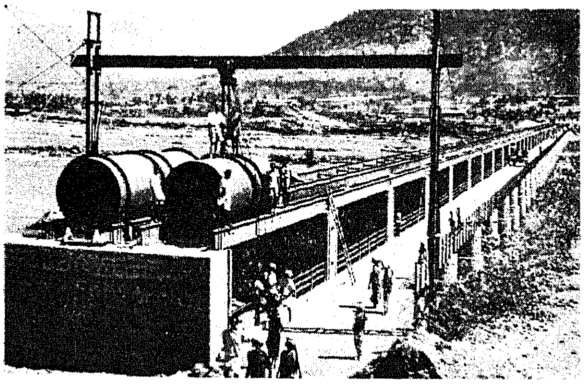
The Araniar Project in Chingleput district and the Walayar and Mangalam Projects in Malabar district are smaller projects costing about 100 lakhs each and work on these is expected to be over by the end of the year and these will benefit a total ayacut of 17,000 acres. To speed up the irrigation development, the Amaravathi (Coimbatore district), the Vaigai (Madurai district), the Sathanur (North Arcot district) and the Krishnagiri (Salem district) projects originally proposed for the Second Five-Year Plan started in 1954 itself under the First Plan. Rapid progress has been in their execution and they will be completed well within the middle of the Second Plan Period. The Amaravathi Project costing Rs. 297 lakhs is across the river Amaravathi and will irrigate an area of 15,000 acres in the famine-stricken Dharapuram and Udumalpet taluks of Coimbatore district. The Vaigai Reservoir Project costing 330 lakhs will conserve mainly the surplus waters of Periyar river now going to waste from the Periyar lake and benefit 20,000 acres in Madras State. This reservoir will incidentally help to conserve the flood flows of Vaigai and store summer tail race water from the Periyar Hydro-electric works. The Sathanur and Krishnagiri Projects costing Rs. 289 and 202 lakhs respectively are across the river Ponniar, the former in North Arcot district and the latter in the Salem district. These reservoirs will help to conserve the surplus waters of the Ponniar river after meeting the demands of the existing ayacut of this river basin and will irrigate 20,000 and 7,500 acres respectively. Besides these major schemes, there are many other smaller schemes under Grow More Food Works and Special Minor Irrigation Programme which have been completed and these works are spread in all the districts of the State. These small schemes benefiting generally the existing or abandoned tanks serve areas extending from a few acres to over 100 acres each. These extents here and there though apparently small go to swell the total area like "little drops of water making the mighty ocean ". The major irrigation projects mentioned above cost in all Rs. 36·8 crores and benefit 5·24 lakhs of acres the yield being 1·18 lakh tons of foodgrains and 14,700 tons of cotton.



Mangalam dam—General view of construction

Second Five-year Plan

With the formation of the Andhra State, the lion's share of the water resources of the composite State of Madras went over to that area and the Second Plan schemes of the residuary State of Madras are proposed so as to utilise the surplus waters of the major river basins without detriment to the existing irrigation and by forming reservoirs across the minor rivers. The residuary State of Madras is left with only one major river, viz., the Cauvery, and other smaller rivers. Of these, the Cauvery is an inter-State river, and the waters of this river have already been fully utilised and naturally we have to turn to other smaller rivers whose waters are yet left untapped fully or partially. Some of the rivers still to be tapped lie in the Malabar and South Kanara districts where the need for such projects was not felt till now, due to the bountiful rainfall available. With the deficiency of food in this State, and need for making each district self-sufficient in the matter of food, the State Government is developing all the available water resources to increase the acreage under irrigation. The possibilities of diverting the surplus waters of the Western Ghat rivers flowing west into the Arabian sea into the eastern plains of the districts of Coimbatore, Ramnad and Tinnevelly of this State, without detriment to the needs of the neighbouring State are being examined. Since these Western Ghat rivers lie also in the territories of another State, these projects can be successfully executed only with the expected co-operation of that State.



Mettur Canal Scheme—View of the pressure aqueduct across Cauvery

In the Second Five-Year Plan, the following irrigation projects are proposed :—

1. The Kattalai High Level Canal Scheme.
2. The Pullambadi Canal Scheme
3. The Parambikkulam Reservoir Project.
4. The Vidur Reservoir Project.
5. The Meenakarai Reservoir Project.
6. The Haladi Reservoir Project.

The salient details of the above projects are as follows :—

Under the Kattalai High Level Canal Scheme the proposed canal will take off from a head sluice located just to the right of the off-take of the leading channel of the South Bank Canal above Kattalai Bed Regulator across Cauvery. The main canal will be 86 miles long and will carry a discharge of about 1,000 cusecs at the head. This scheme costing 157 lakhs will benefit 20,622 acres in Tanjore and Tiruchi districts.

Pullambadi Canal Scheme

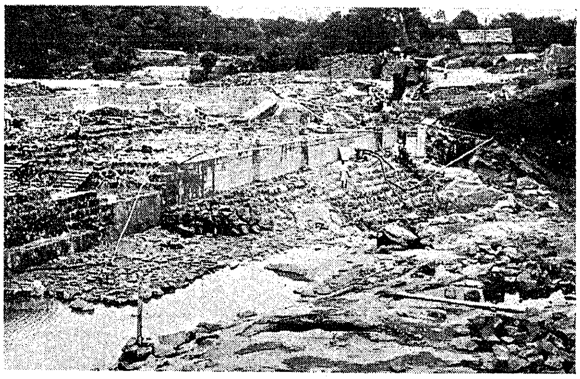
The Pullambadi Canal Scheme proposes the formation of a canal from a head sluice to be located close to the head of the existing Peruvalai channel from the Cauvery above the upper anicut on left side. The scheme costs 142 lakhs and the main canal running for a length of 54 miles will benefit 22,114 acres in Tiruchi district of which 1,451 acres will be existing wet lands.

The proposals for diverting the waters of the west flowing rivers into the eastern plains have gained currency of late. Three major projects of this category appear feasible and investigation is being undertaken in respect of one of them, namely, the Parambikulam Project. This project aims at benefiting large tracts in Coimbatore district utilising the run-off of the Parambikulam river and other streams whose catchments lie in Madras State. This scheme is a multi-purpose project costing nearly Rs. 30 crores which will provide irrigation and power besides yielding ideal spots for game sanctuary and pisciculture. Though the scheme was thought of even in 1947, it was not pursued as more remunerative schemes like the Krishna, Pennar, etc., were then in the offing in the erstwhile composite State of Madras and as these sources have now gone over to the Andhra State this scheme has again come into limelight. The scheme is at present under detailed investigation.

The Vidur Reservoir Scheme located in South Arcot district will form a reservoir across Varahanadhi below the junction of Varahanadhi and Tondiar rivers having a capacity of 550 M.cft. This scheme costing 61 lakhs will benefit 2,700 acres in Madras and Pondicherry States.

The Meenakarai Reservoir Project located in Palghat taluk in the Malabar district estimated to cost 50 lakhs will form a reservoir of 3 M.cft. to enable the extension of irrigation to an area of 4,100 acres.

The Haladi Project located in Coondapur taluk of South Kanara district is estimated to cost Rs. 188 lakhs and with a reservoir of 3,400 M.cft. capacity, this scheme which is the first major irrigation project in South Kanara district will enable irrigation in an area of 10,000 acres.



Sathanur dam construction

Besides these major schemes, a special minor irrigation programme consisting of small diversion works, etc., which embraces a greater range of areas and which will yield quicker results is also proposed to be continued during the Second Five-Year Plan at a total cost of Rs. 2·5 crores. Improvements to small tanks of this State which are going out of maximum utility due to gradual silting up every year is also proposed under this plan, the expenditure being Rs. 50 lakhs. A novel and economic scheme, called desilting-*cum*-reclamation, has been proposed to restore these tanks to full utility. Under this proposal, about half the lost capacity will be restored by desilting the tank bed and the other half by raising the F.T.L. of the tank. The desilted earth will be partly utilised to reclaim the foreshore lands and bring them under cultivation in cases where they are not hitherto cultivated. The above schemes proposed in the Second Five-Year Plan will cost about Rs. 51 crores and will benefit an area of 7·0 lakhs of acres yielding 2·00 lakh tons of food-grains and 23,600 tons of cotton.

Milestones

We are now on the threshold of the Second Five-Year Plan. Looking back at our achievements during the past 5 years, we can conclude that the results are re-assuring and this achievement will strengthen us in no small measure in realising the targets of the more ambitious Second Five-Year Plan well ahead of the Plan period. In the life of a nation, these five-year plans are only milestones and it is not possible to fix a goal to our achievements for the welfare of the nation. However, the completion of the various irrigation schemes of the First Plan have changed the landscape of many an area of this State beyond recognition and the further fulfilment of the contemplated target under the Second Plan will raise the standard of living of the common man to a considerable extent. These projects besides fulfilling their primary object of increasing the food output will enable other side developments in these project areas and the general public, it is hoped, will commend these works as " JOBS WELL DONE ".

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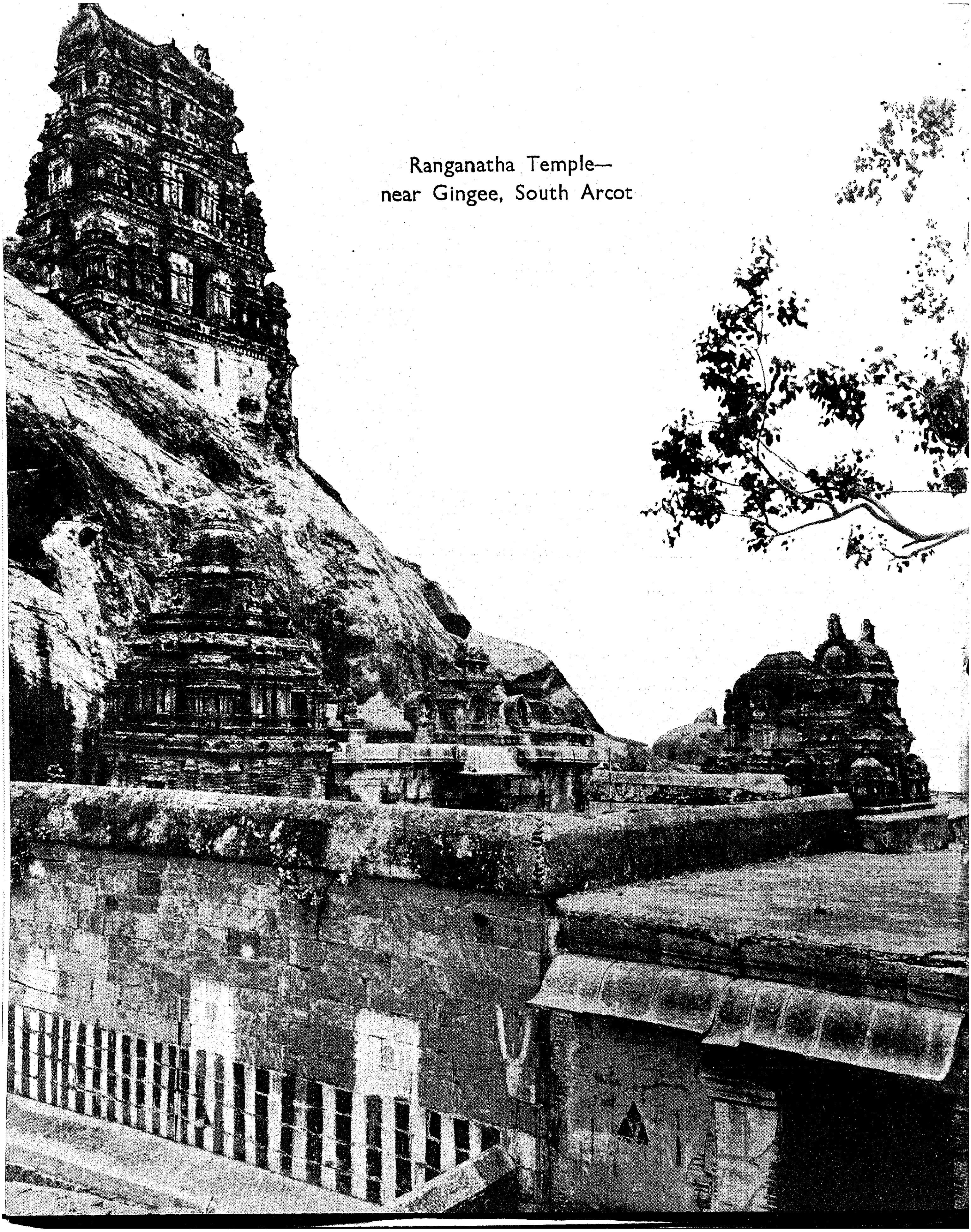
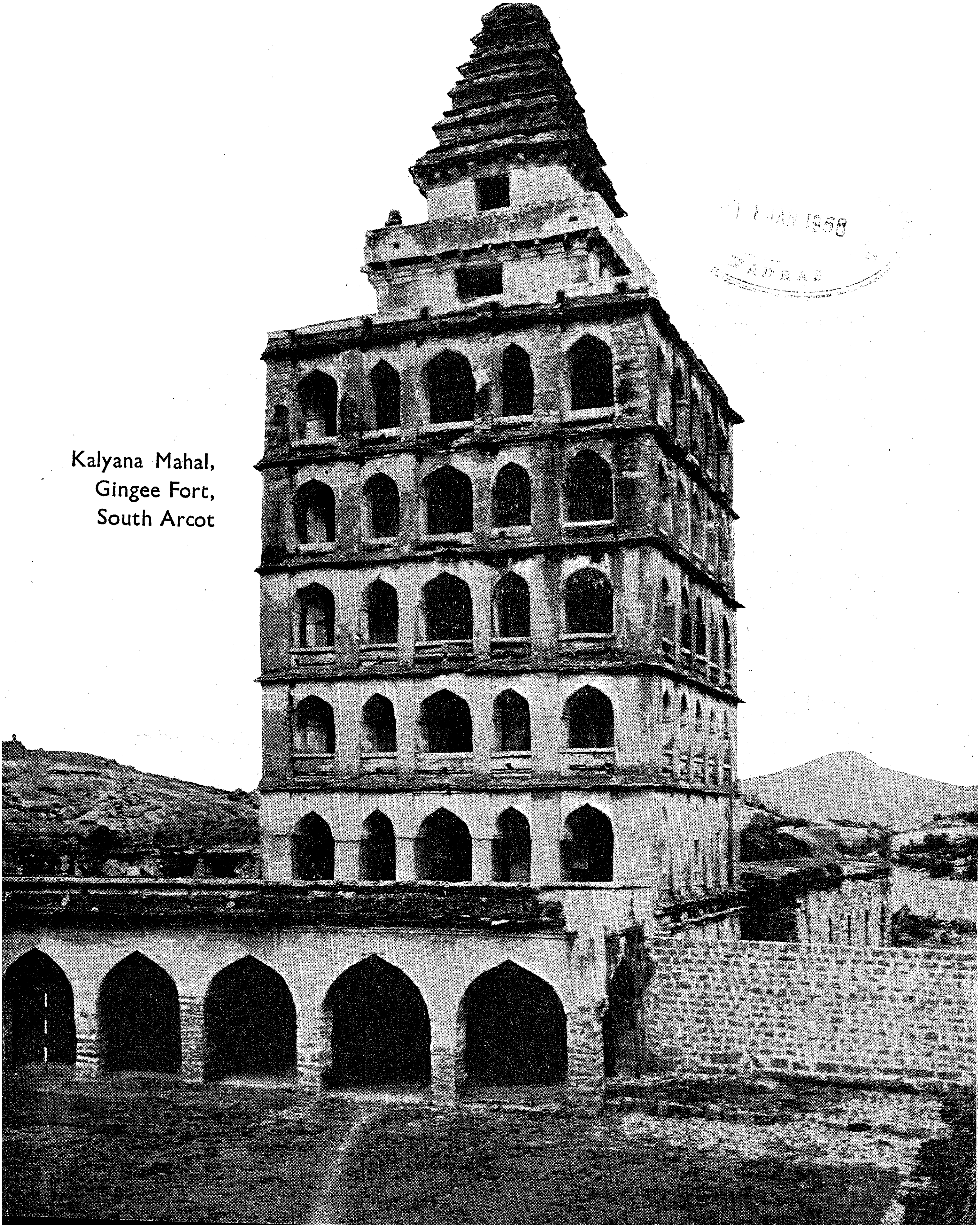


Ranganatha Temple—
near Gingee, South Arcot



Kalyana Mahal,
Gingee Fort,
South Arcot

1 MAR 1958
MADRAS

Power Projects and the Plan

V. P. APPADURAI,
Chief Engineer (Electricity).

WITH the ending of the war in 1945, the State Government sanctioned several schemes constituting a post-war plan of development for the State in 1946–51. This plan provided for—

(*a*) Two new power houses at Moyar and Madurai,

(*b*) Extensions to three existing power houses, viz., Pykara III Stage, Papanasam II stage and Madras plant extensions, and

(*c*) High tension lines and distribution lines for conveying the additional generation to existing and new load centres.

As a result of delayed delivery of steel, cement and power plant during the period of post-war strain none of the schemes could be completed before 1951.

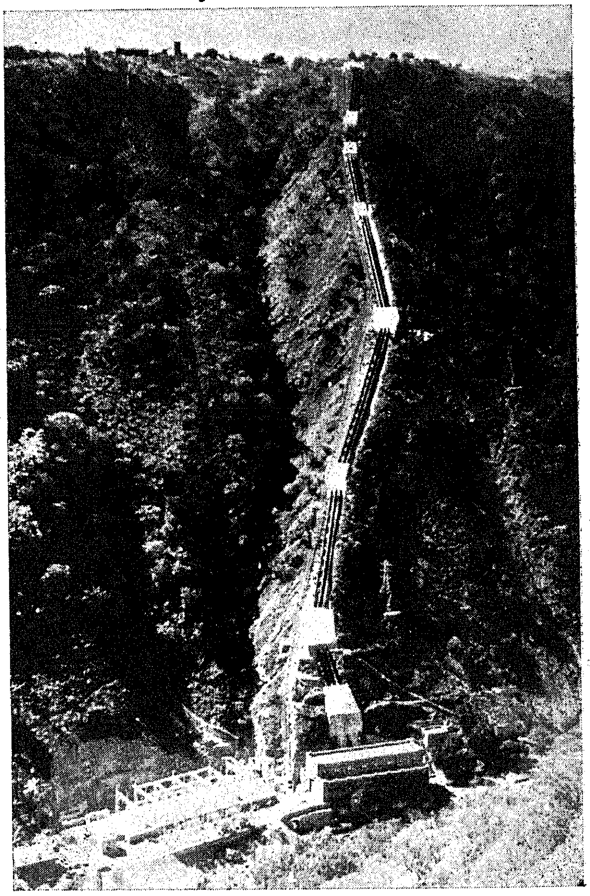
As such, all these schemes were included in the First Five-Year Plan (1951–56) formulated by the Planning Commission of the Government of India in 1951. The Periyar Hydro-Electric Scheme was later included in the Plan in 1954 and provision was made therein for commencement of work from 1954–55. Subsequently, to speed up the rural electrification programme, Government of India offered to the State a loan of Rs. 300 lakhs for rural extension schemes in addition to those already included in the Plan. The schemes of the first Plan are estimated to cost a total of Rs. 3,086 lakhs.

A brief description of the progress of the schemes of the first Plan are given in the following paragraphs :

Moyar Hydro-Electric Scheme

This scheme envisages the utilisation of the tail waters of the Pykara Power House in the Moyar Valley over a drop of 1,250 feet, nine miles lower down. The main features of the scheme are as follows :

Construction of a masonry diversion weir 283 feet long and 50 feet high across the Glenmorgan stream to divert the tail waters of the Pykara Power Station, construction of channel, 7,600 feet long to carry the diverted water to an adjacent stream, and formation of a regulating



Moyar Power House

reservoir of 28 million cubic feet capacity at Maravakandy by the construction of a masonry dam 1,360 feet long with earthen bunds on either side. Water from the reservoir is taken by a flume channel to the forebay and from there to the power station by means of a 7-foot diameter low pressure pipeline to the surge tank at the head of the Moyar gorge and three penstocks 45 inches by 42 inches diameter running down the hill slope to the power station. The power station is equipped with three 18,000 H.P. impulse turbines coupled to 12,000 KW 11 KV. alternators. The power generated is stepped up to 110 KV and transmitted to Pykara and Erode through 110 KV. double circuit transmission lines carried on steel towers.

The first generating unit came into operation in April 1952, the second in September 1952 and the third in January 1953.

The transmission lines connected with the scheme, viz., a double circuit 110 KV line from Moyar to Erode and another 110 KV double circuit line inter-connecting Pykara and Moyar power stations were completed even before the first unit came into operation.

Pykara Third Stage Extensions

The scheme comprises a second dam across the Pykara river to provide a storage of 2,000 million cubic feet, a new penstock line (laid along the existing three penstocks) and two generating units of 13,600 K.W. each, at the Pykara power house extended suitably.

Building masonry for the main dam structure, earth bund at right flank, retaining walls for earth bund and concreting for R.C.C. core wall on the left flank have made advanced progress. The dam is expected to be completed by middle of 1956.

Construction of the power house extensions and machine foundations were completed during 1953–54. The erection of the fourth penstock line with its valves has also been completed.

The erection of the 6th and 7th generating units, as also the necessary step-up transformers and switchgear, have all been completed and the generating sets were commissioned in July 1954.

The construction of the Pykara-Coimbatore-Madurai third circuit 110 KV line for transmitting the additionl power that becomes available under this scheme has been completed and the sub-station extension works at Coimbatore and Madurai are in progress.

Papanasam Second Stage Extensions (including Madurai Thermal Station)

The scheme includes provision of spillway gates at the Papanasam Dam enabling additional storage in the reservoir and extension to Papanasam power house by an additional generating unit of 7,000 KW.

This work has been completed with the commissioning of the fourth 7,000 KW set in July 1951.

The scheme also includes the installation of an auxiliary steam station with a total installed capacity of 14,000 KW at Samayanallur near Madurai. A 4,000 KW turbo-set with two coal-fired boilers was commissioned in February 1951 and the third boiler associated with this later in July 1951. The second turbo-set of 10,000 KW was commissioned in April 1953 and the two 55,000 lb./hour boilers associated with the above turbo-set commissioned in March 1954, thus completing all the works.

The following transmission lines included in the above scheme were also completed during 1953–54:—

(i) Papanasam-Tirunelveli-Kayathar 66 KV lines.

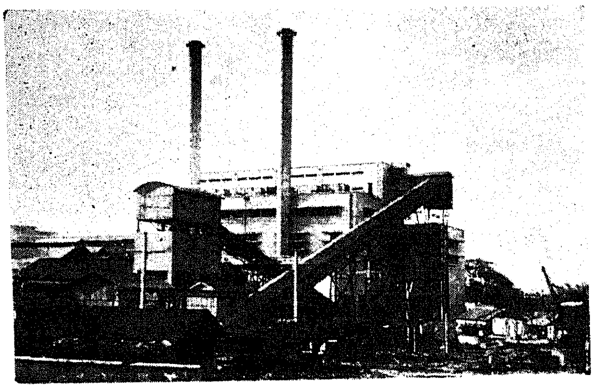
(ii) Madurai-Sivaganga 66 KV line.

(iii) Madurai-Thirumangalam-Rajapalayam—Tenkasi 66 KV lines.

Madras Plant Extensions

This scheme is to augment power supply in the Madras City by extending the Basin Bridge Power House to receive 60,000 KW additional power plant in three stages.

The civil works for the first stage, viz., piling and foundation slab for the power station main building, office and control block, coal conveyors 1 to 5 and ash conveyors, steel work for the main building RC ash bunker, RC ash conveyor tunnel and crusher house have all been completed. The natural draught cooling tower of 15,000 gallons per minute capacity has also been completed.



New extensions of the Madras Thermal Station

All the three 80,000 lb./hour boilers under the first stage have been commissioned, the first in May 1952, the second in November 1952 and the third in May 1953. The 15 MW. turbo-set under the first stage was commissioned in 14th March and after some initial teething troubles the set was recommissioned after repairs on 14th August 1953. The first stage of the above scheme is practically completed, except for some very minor works.

Under the second stage of the above scheme, erection of one of the two 80,000 lb./hour boilers was completed. Work on the erection of the foundation for the second boiler is in progress and this is expected to be commissioned by end of 1956. Erection of the 15 MW turbo-alternator under the second stage has been completed and the set has been commissioned along with the boiler No. 1 in January 1955.

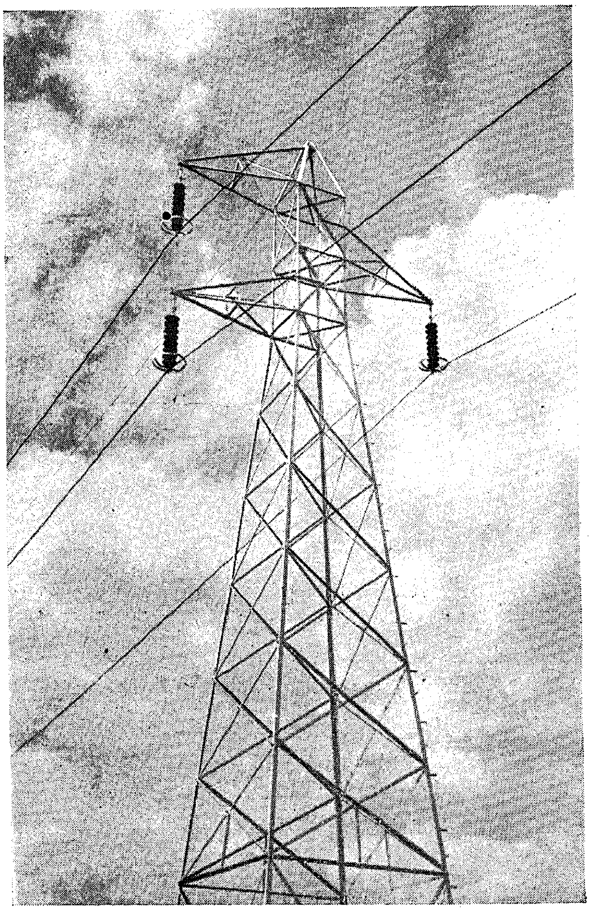
Work on the third stage which involves an addition of 30 MW to the generating capacity with 2 No. 180,000 lb. per hour boilers has been taken up. Orders have been placed for the boilers, turbo-set, switchgear and circulating water system. This work is expected to be completed by 1957–58, i.e., the second year of the Second Plan period.

Madras-Mettur Inter-connection Scheme

The scheme provides for the inter-connection of the Mettur Hydro Station with the Madras Thermal Station by a 110 KV transmission line tie, for interchange of power between the two stations to afford relief to hydro system in periods of water shortage. The scheme comprises a 110 KV single circuit line of 124 miles from Singarappet to Villivakkam (near Madras) and 33 KV double circuit line from Villivakkam to Madras Basin Bridge Power station with a 110/33 KV sub-station and two 5,000 KVA. synchronous condensers at Villivakkam and additional equipments at Mettur, Erode, Singarappet, etc.

The main 110 KV transmission line was completed in 1950 itself and was operating at 66 KV. initially permitting limited interchange of power between the Madras Thermal Station and the Mettur Hydro System.

After completing the arrangements required at various sub-stations for changing over the operation of the line to 110 KV, the voltage of operation of the Mettur-Madras circuits was changed over from 66 KV to 110 KV early in 1954. The Mettur-Erode double circuit lines were also changed over to 110 KV operation at the same time.



The erection of two 7,500 KVA and two 5,000 KVA transformers at Villivakkam and two 5,000 KVA synchronous condensers, was completed during 1953-54 as also the staff quarters, water-supply, etc., in the sub-stations. The scheme has been completed in all its essential aspects.

Transmission Lines and Distribution

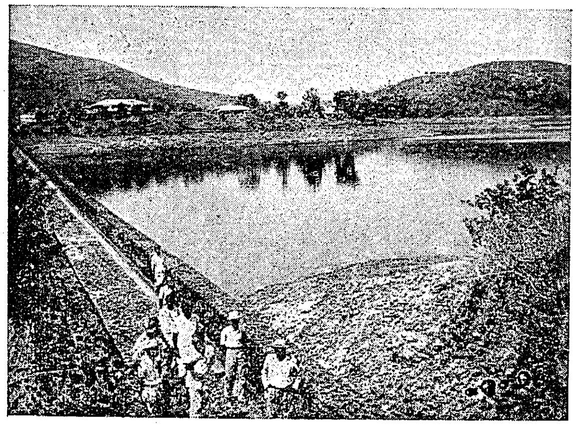
Apart from the trunk transmission lines included in the hydro-electric or thermal projects to transmit power to the main receiving stations, a number of secondary E.H.T. and H.T. transmission lines are required for the transfer of power to the load centres scattered all over the state. In addition, distribution lines have to be built, mostly to expand the rural electrification of this State.

The following are some of the more important major transmission lines completed during the years 1951-55 :—

1. Erode-Salem 110 KV line.
2. Erode-Tiruchirappalli 110/66 KV line.

The more important of the transmission lines under construction which are likely to be completed by 1955-56 are—

1. 110 KV line from Mysore border to Mangalore for supplying Jog power to South Kanara district.
2. Salem-Rasipuram-Namakkal 110 KV line.
3. Singarapet-Villupuram 110 KV line.
4. Singarappet-Vellore 66 KV second circuit.
5. Coimbatore-Madukkarai-Palghat 66 KV line.



Periyar Dam and Lake

Acquisition of Electrical Undertakings

The total number of undertakings involved in the present Madras State is 27 private undertakings and 27 local authorities undertakings.

Up to the end of 1951-52, three company undertakings and 20 local authorities undertakings were acquired by Government under the Madras Electricity Supply Undertakings (Acquisition) Act, 1949.

No undertakings were acquired during the years 1952-55 due to the financial stringency and also in view of the suits filed by certain licensees in the Madras High Court questioning the validity of the Acquisition Act and the Madras High Court's decision in favour of the licensees.

The subsequent decision of the Supreme Court in favour of the licensees, when the Madras Government appealed to the Supreme Court, necessitated the revalidation of the Acquisition Act, which has been done recently.

The future programme for acquisition depends on various factors, like the condition of working of the undertaking concerned, finance available with the State Government, etc. Government have acquired the following undertakings in 1955-56 :—

1. Palghat.
2. Tirupattur
3. Bodinayakanur.
4. East Ramanathapuram.
5. Ambur-Vaniyambadi.
6. Chingleput.

The balance undertakings are expected to be taken over during the Second Plan period.

Periyar Hydro-Electric Scheme

This scheme was sanctioned by the Planning Commission only in 1954 after the conclusion of protracted negotiations of the Madras Government with the Travancore-Cochin State regarding the royalty to be paid for the use of the Periyar waters for power generation. It involves the construction of a power station in Madurai district for utilizing the irrigation discharge from the Periyar Irrigation Reservoir below the existing irrigation tunnel where a head of about 1,230 feet is available for power production. It is proposed to build a small forebay of 3 million cubic feet

at the exit end of the irrigation tunnel, a new power tunnel 4,200 feet long, a surge shaft at the end of the power tunnel and three rows of penstocks about 3,200 feet long, each supplying power water to one 35,000 KW set at the power-house to be constructed at the foot of the penstock. The power-house is designed for accommodating a fourth generating unit later. A system of 110 KV, 66 KV and 33 KV transmission lines and sub-stations connecting the power-house to the Madras Grid will convey the power to the various load centres.

The scheme was inaugurated on 11th February 1955 and the construction of camps and roads have now been practically completed. Excavation for the forebay dam and power-house and grading of penstocks are under progress. Orders have been placed for the power transformers and the materials and construction of transmission lines. Orders for the generating sets, sub-stations, penstocks, etc., will be placed before the end of the year. The scheme is expected to commence operation in 1958–59 with 105,000 KW installed capacity. The scheme is estimated to cost Rs. 10·48 crores.

Achievements under the First Five-Year Plan

The capital invested and in operation increased from Rs. 18·44 crores at the beginning of the Plan to Rs. 36·08 crores, i.e., nearly by 100 per cent by the end of 1954–55 and is expected to increase to Rs. 46·00 crores or over 150 per cent by the end of the Plan period. Outlay on construction of new projects touched record figures each year during this period of four years and it is expected that the figure for 1955–56 will be higher than any so far.

The installed generating capacity in the Grid increased by nearly 69 per cent from 156,000 KW to 263,200 KW by the end of 1954–55. The full Five-Year Plan target for additional generating capacity has been realized even by the fourth year of the plan.

The details of additions to power generating capacity in the Grid are as follows :—

	KW
1. A new Hydro-Electric power station under the Moyar Hydro-Electric Scheme.	36,000
2. Addition to existing power stations—	
(a) Papanasam II Stage (Hydro).	7,000
(b) Madurai Thermal Station (Thermal).	10,000
(c) Madras Thermal Station (Thermal) I and II Stages.	30,000
(d) Pykara III Stage Extensions (Hydro).	27,200
Total ..	110,200

Power demand met and energy generated in 1950–51, the year preceding the Plan, and in 1954–55, the 4th year of the Plan, and the anticipated figures for 1955–56 are as below :—

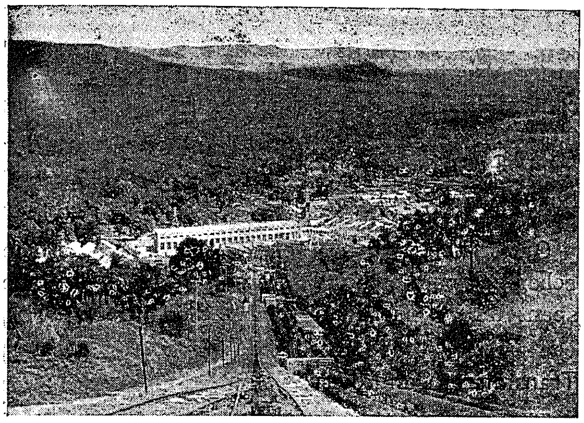
	1950–51	1954–55 (*actuals*).	1955–56 (*anticipated*).
Aggregate power demand in KW.	130,850	181,600	200,000
Total number of units generated in Government power stations in millions.	630·97	933·67	1,050
Total number of units generated for the whole State.	634·63	938·84	1,055

Progress under Rural Electrification

Madras State leads all other States of India in rural electrification. The number of villages electrified in the State as at the end of each year from 1950–51 onwards is given below :—

1951	1,613
1951–52	1,820
1952–53	1,961
1953–54	2,089
1954–55	2,392
1955–56 (anticipated)	2,900

The number of villages electrified during the Plan period will be about 1,300. Considering that the target as per the Plan was 250 villages to be electrified for the Composite State (including Andhra) the actual achievement of about 250 villages per year even for the present Madras State may be considered very satisfactory, especially in spite of the acute financial stringency that prevailed in 1952–53 and the first half of 1953–54.



Pykara Power House

The most popular use of electricity in the village is for agriculture by means of electrical-driven pumpsets for lifting water. The numb of agricultural consumers in the areas served by the Government directly and by the distributing licensees taking power from the Government is given below :—

	1950–51.	1954–55.	1955–56 (*anticipated*).
Number of pumpsets served directly by Government.	11,859	19,676	24,500
Number of pumpsets in licensees' area.	2,767	4,978	5,500
Total number of agricultural pumsets.	14,626	24,654	30,000

More than 15,000 pumpsets would have been added to the Grid at the end of the Plan period.

Next to agriculture, the use of electricity in villages is becoming popular for the various rural industries. The expansion of rural industries may be guaged from the following figures for the areas served directly by the Department :—

	1950–51.	1954–55.	1955–56 (*anticipated*).
1. Number of rural industries.	1,556	2,455	3,000
2. Connected load in KW.	19,810	27,361	33,000

The rural industries comprise mostly industries for processing the village produce, like tea-curing, rice hulling, cotton ginning, sugarcane-crushing, groundnut decorticating, flour milling and oil chekkus and a few industries like fountain pen making, silk throwing, tape-weaving and woollen carpet drugget industry.

Electricity in the development of Industries

Important among the major industries added to the Grid in the first four years of the First Plan period are—

1. Extension of the existing Cement factory at Madukkarai and Dalmiapuram.

2. Addition of over 18 new textile mills.

3. New factories of various types like motor car assembly, manufacture of bicycles, manufacture of batteries, etc.

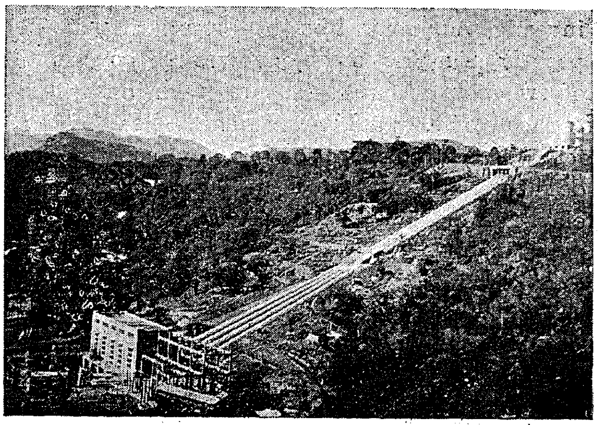
4. Integral Coach Factory at Perambur of the Indian Railways.

The number of small-scale industries increased from 3,859 (with a connected load of 30,982 KW) in 1950–51 to 6,197 (with a connected load of 50,241 KW) by 1954–55 and is expected to increase to 7,500 (with a connected load of 61,000 KW) by end of 1955–56.

Second Five-Year Plan

The First Five-Year Plan is coming to an end and we are on the eve of the Second Plan.

The draft Second Five-Year Plan for the power schemes of the Madras State has been prepared bearing in mind the anticipated demand and the



Papanasam Power House

resources of the State. The Planning Commission have tentatively approved a figure of Rs. 61 crores for power projects out of a total of Rs. 180 crores, the ceiling limit fixed for Madras State Plan. The provision for development plans under electricity thus forms 33 per cent of the total amount allocated for the State. The additional generating capacity that will be installed by end of 1960–61 will be 307 MW which will more than double the present installed capacity of the Madras State.

The power projects included in the Plan comprise the balance of works on schemes of the First Five-Year Plan which are under execution and new schemes to be taken up in the Second Plan. The schemes of the First Plan, which are to be continued in the Second Plan, are the Madras plant extensions, the Periyar Hydro-Electric Scheme, the transmission and distribution scheme and acquisition of electrical undertaking, all estimated to cost Rs. 16 crores. These will bring in an additional generating capacity of 155 MW. Details of these schemes have been given in the earlier paragraphs. The new schemes included in the Plan will bring an additional generating capacity of 152 MW by the end of the Second Plan and are described below.

Kundah Hydro-Electric Scheme

Kundah Hydro-Electric Scheme is the biggest of the new schemes of the Second Plan and will be the biggest of all the hydro-electric schemes of the State. The development of the Kundah basin in the Nilgiri Hills is proposed to be taken up in four stages. Only the first two stages have been investigated and will be taken up during the Plan period. The first stage involves the construction of two power-houses, the first with an installed capacity of 40,000 KW with a gross head of 1,180 feet. The storage will be built by constructing a dam across the Avalanche and Emerald streams at elevation of about 6,500 feet.

The tail waters of the first power-house and the free flow from the Kundah basin below Avalanche-Emerald Dam will be utilised for generating power at a second power-house with an installed capacity of 105,000 KW comprising 3 units of 35,000 KW each. The gross head for this station will be 2,800 feet.

The first stage of the scheme is expected to be completed by the end of 1960–61 bringing in an installed capacity of 145 MW. The second stage contemplates an additional storage of about 3,000 M. c.ft. at the Upper Bhavani catchment at elevation of 7,470 feet and extension to Power-house 2 with a fourth 35,000 KW generating unit.

Out of the total cost of Rs. 35 crores for the scheme, a sum of Rs. 23 crores is expected to be spent during the Plan period 1960–61.

Transmission and distribution

The transmission and distribution project under the Second Plan envisages the construction of a few major transmission lines and a number of secondary transmission lines required for taking the additional power to the remotest corners of the State. This includes the 110 KV line to be erected from Travancore-Cochin border to Udumalpet to enable Madras Grid to avail the 20,000 KW of supply which the Travancore-Cochin Government have promised to give us from their Sengulam and Paringalkutlu Hydro-Electric Schemes.

Including the transmission lines proposed under the Kundah and Periyar Hydro-Electric Schemes, an additional 8,200 miles of E.H.T. and H.T. lines and 6,500 miles of L.T. lines will be erected in the Second Plan period.

Besides the above, a provision of 12 crores of rupees has been made for rural electrification in the State. This is intended for building up distribution lines of voltages 22 KV, 11 KV and 400 volts to expand rural electrification programme and bring electricity to the nooks and corners of the various districts of the State.

It is proposed to electrify at least 2,000 additional villages and give supply to 24,000 additional pump-sets during the Second Plan period.

Sandynallah Reservoir Scheme

The Sandynallah Reservoir Scheme envisages construction of a storage reservoir across the Sandynallah river about 6 miles from Ootacamund. The water thus stored will be diverted to Pykara Reservoir through a tunnel and this will result in an additional total annual generation of 54 million units at the Pykara and Moyar Power-houses.

The scheme is programmed to be completed by 1959–60 and would involve an expenditure of Rs. 1·25 crores.

Pykara Dam and Papanasam Dam Power-houses

These two schemes envisage the installation of generating stations one at the foot of the Pykara Dam and the other at the Tambraparni Dam to utilize the heads available at the dams for power generation. A single generating unit of 3,000 K.W. capacity will be installed at the Pykara Dam Station and a single 4,000 K.W. set in the Papanasam Dam power-house. The estimated cost of the scheme is Rs. 30 lakhs for Pykara Dam power-house and Rs. 41 lakhs for the Papanasam Dam power-house.

Conclusion

The Electricity Department has a very heavy responsibility to carry out in the launching of our programme in the Second Five-Year Plan. With the unstinted support which this department is getting from the State Government and the Ministers and with the loyal co-operation of the officials, subordinates and workmen of various categories of this department, the department hopes to carry on successfully the task assigned in the builiding up of the Nation.

The per capita consumption of elctricity which is a recognized index of the economic advance of any State is now about 21 units for Madras. It is hoped to raise this figure to 40 units by the end of the Second Plan period. This state will be still far behind the Western countries where the per capita consumption is of the order of 2,000 to 4,000 units. We have, therefore, to go a long way ahead if we are to attain a standard anywhere near that of the Western countries. With the unremitting efforts of all concerned, we hope to march ahead in the field of socio-economic development of our State by the spread of electricity and raise the standard of living of the common man and bring brightness and happiness to every home.

NATIONAL PROSPERITY NEEDS . . . . . .

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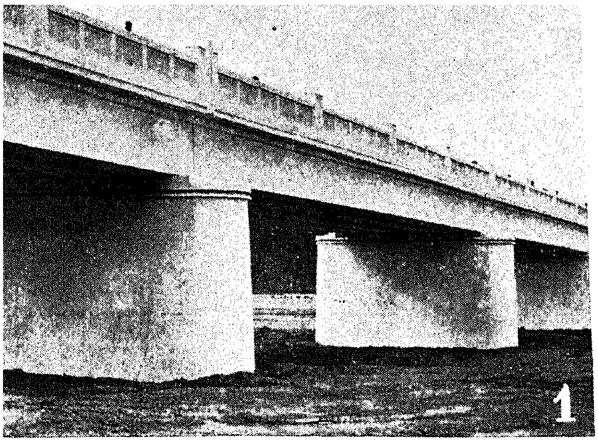
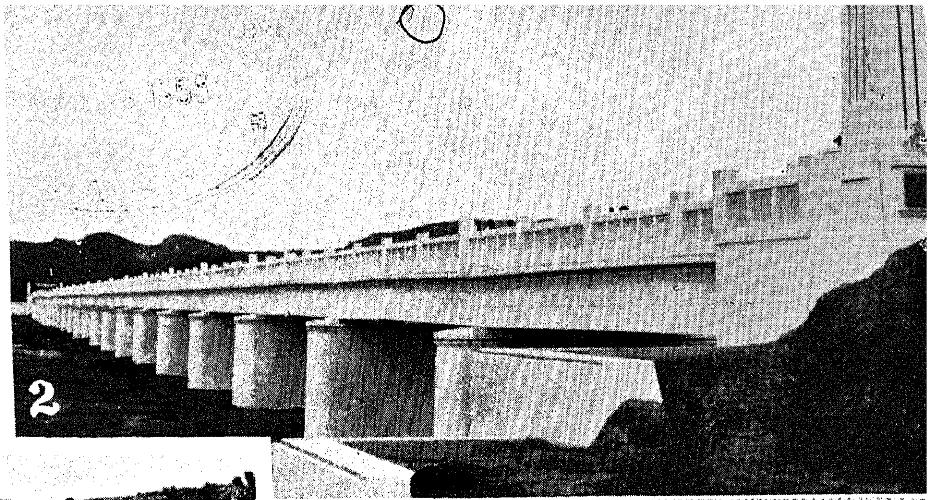
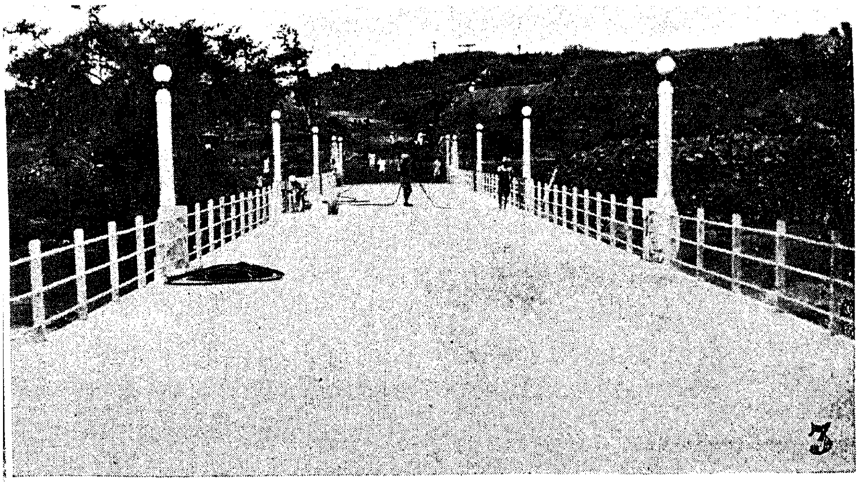
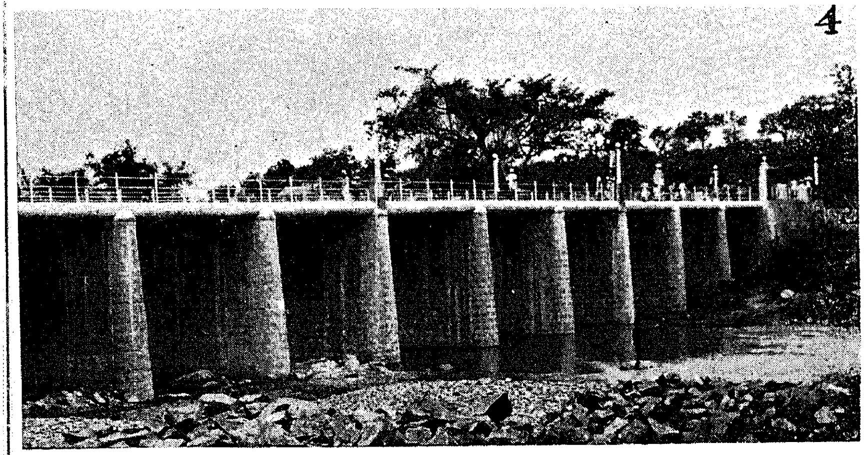
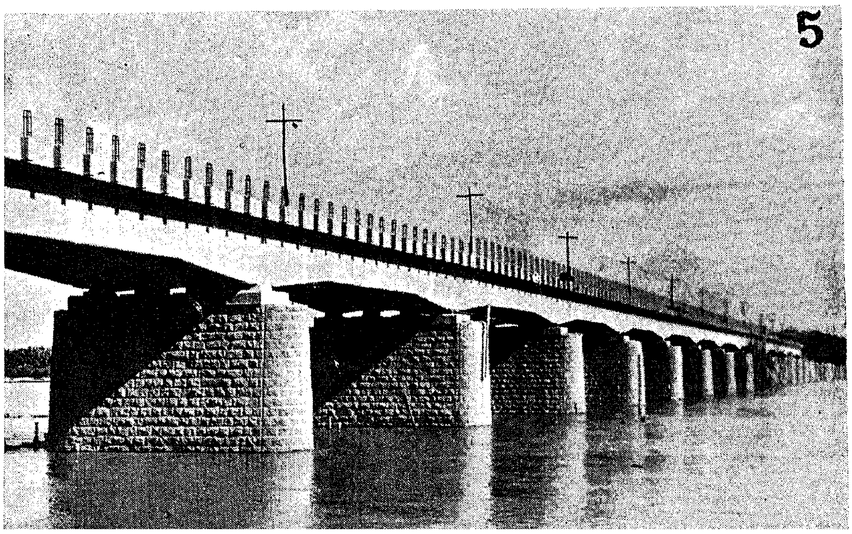










OUR NEW BRIDGES

1. & 2. Palar Bridge.
3. Vaigai Bridge.
4. Sathanur Bridge across Ponniar.
5. Pugalur Bridge.

Development of Highways

K. K. NAMBIAR,
Chief Engineer (Highways).

GOOD roads are the vital life lines of the Nation. To-day there is a general awakening and an intense urge for an efficient transport system in the country. A good net work of Highways directly or indirectly contributes much towards the development of the primary needs of mankind such as food, shelter and clothing. Serving as a means of conveyance for agricultural produce or for the movement of the raw materials to the factories and finished products of the Industry to markets and railheads, an effective system of communication will cut down industrial cost and will reduce the price of the agricultural produce. Easy, quick and economic transport should be the aim of a country for its general progress. The dawn of Independence has afforded an opportunity, for reconstructing the Nation's economy in the form of various developmental activities. Road development should precede all other developmental activities, if the objectives are to be accomplished quickly and economically.

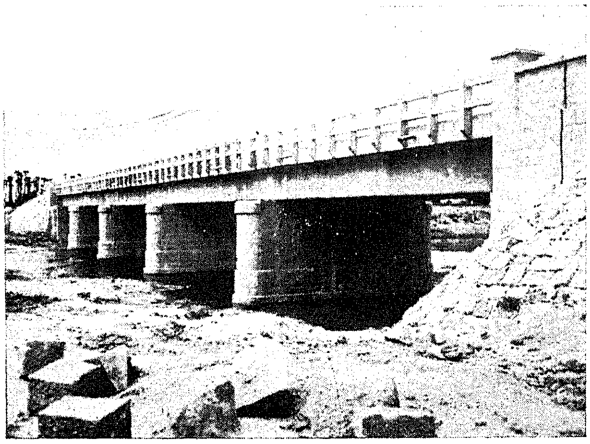
Modern Highway Design

Some decades ago the existence of a few dusty roads was sufficient for the use of animal-drawn vehicles. To-day the concepts of transportation have undergone a revolutionary change with regard to time and space. In course of time, the animal-drawn vehicles will almost be replaced by modern fast moving automobiles. This presumption is confirmed by experience in other advanced countries. There is a remarkable increase in the number of automobiles in the Madras State, growing from almost nothing in 1914 to about 40,000 in 1952. To-day this will be much more. The demands of such fast moving vehicles should be provided for by roads of adequate structural strength. Essential geometrical features such as smooth curves, sufficient widths and superelevations, etc., will have to be incorporated in the Modern Highway Design. The large number of bridges and culverts presenting weakest links in the chain of communication as far as load carrying capacity is concerned must receive immediate attention. Excellent cement concrete road will be practically of no use if warning signs are put up here and there limiting axle loads to three to four tons. Heavily loaded trucks are at times forced to unload the cargo while crossing a bridge and reload the same owing to such restrictions.

The first scientific approach towards the Development of Highways in Madras State was made in the year 1935, and the scheme for the Road Development in the Madras Presidency known as "Vipan Scheme" was published. The Second World War spotlighted the importance of road communication during times of war. It was also realized that even during peace time, road communications plays an important role in the well being of the people. Fully alive to the basic requirements in our State in regard to communication, a number of plans have been drawn out. The question of road development was considered of a national basis at a conference of expert Road Engineers at Nagpur resulting in the drawing of "Nagpur Plan". This plan emphasised that the road system of India should be looked up as an integral whole and that development should be balanced as between different categories of roads in a planned sequence.

Road Deveolpment Programme

Based on the recommendations of the Nagpur conference Madras State decided to prepare and execute a Road Development Programme for the State. A small engineering group constituted to supervise the construction and maintenance of the strategic roads during the war period was the



Agavalam Bridge—Arkonam-Ocheri Road

nucleus with which the department started to function. Then a separate Highways Department was formed in the State, with the engineering personnel in the charge of roads in the district board as well as a few more drawn from other branches of Public Works Department. A comprehensive Post-War Road Development Scheme was drawn by the Highways Department for a period of 25 years. This scheme provides road access to all villages with a population of more than 500 and contemplates adding 8,239 miles of new roads, converting 17,038 unmetalled fair-weather roads into water bound macadam all weather roads, providing blacktop surfacing to 1,257 miles and cement concrete surfacing to 1,229 miles, and constructing bridges and causeways across all unbridged river crossings, the total scheme costing Rs. 40 crores or Rs. 60 crores at the present day rates. The targets of the scheme are given in figure 1. There are about 19,500 villages in Madras State. 78 per cent of the population live in these villages. Of these, 38 per cent live in 7,000 villages having a population of more than 500 and served by the existing road system. Under the Post-War Road Development Scheme, an addition of 5,000 miles of rural roads is contemplated to connect 36 per cent of the population living in the remaining 6,500 villages with a population of over 500. Under the development programmes, such as National Extension Service, Community Projects, Local Development Works, etc., roads are being constructed to serve the remaining 4 per cent of rural population scattered in 6,000 villages with a population of less than 500. The targets of this Post-War Road Development Programme could not be fully achieved due to lack of adequate funds. Hence this was merged with the National First Five-Year Plan, inaugurated in the year 1951.

Position in 1950–51

The First Five-Year Plan was drawn taking into accounts the extensive and complex needs of the fast increasing traffic and the growing population, with due consideration towards the road system that existed in 1951. The situation regarding the communications services (excluding National Highways) as existed in the year 1950–51, in the residuary Madras State is given in table below :—

Serial number.	*Type of surface.*	MILES
1.	Blacktopped surface	543
2.	Cement concrete surface	67
3.	Water bound macadam surface ..	14,127
4.	Other types	8,889
	Total ..	23,626

The mileage per square mile was then 0·39 and it appeared that we must go ahead and build new roads at least ten times the total mileage of our existing roads in order to come up to a satisfactory standard. A sum of Rs. 358 lakhs was targetted for expenditure on the schematic programme of the road development in the First Five-Year Plan under the following heads :—

	LAKHS. RS.
1. State Highways	170
2. Other Roads	89
3. Tools and Plant	99
Total ..	358

Towards the end of the First Five-Year Plan in 1955-56 the total length of the roads will be 26,400 miles (excluding National Highways) with the following types of surfaces :—

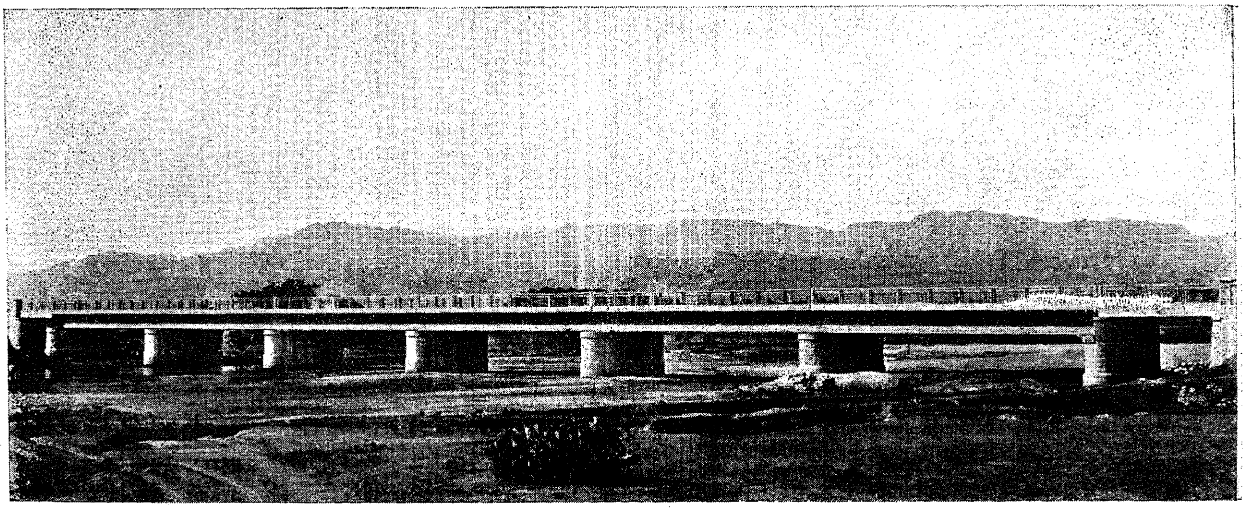
		MILES.
1.	Cement concrete surface ..	150
2.	Blacktopped surface	4,000
3.	Water bound macadam surface.	11,900
4.	Other types of surface	10,350
	Total ..	26,400

About 158 schemes under major bridges and 241 schemes under minor bridges and culverts were completed till the end of March 1955. Many such schemes are now under execution. Since the formation of the Highways Department from 1946, about 3,600 miles of new roads have also been formed to benefit the isolated villages with easy access to the urban areas.

First Five-Year Plan

The First Five-Year Plan for the development of National Highways was a separate scheme by itself wholly aided by Government of India and the total estimated value of the schemes included in the approved programme was Rs. 405 lakhs. Out of this provision, about Rs. 36 lakhs have been spent in providing 45 miles of cement concrete roads and a sum of Rs. 25 lakhs was utilized in blacktopping about 35 miles of roads. About 140 miles of roads were newly constructed (this includes improvements and widening also) at a total cost of Rs. 20 lakhs. About 70 schemes have been completed under major and minor bridges and culverts at a cost of Rs. 70 lakhs. Above all these, many major schemes are also now under progress. A remarkable achievement in the First Five-Year Plan Period in the Madras State is the completion of providing improved surfacings to the entire stretch of the National Highway system in the State. The programme and achievement of the First Five-Year Plan are shown in figures 2 and 3. Some of the important bridges constructed within the First Five-Year Plan Period are shown in photos.

With the advent of large number of automobiles the subject of surfacing of roads assumed great importance, to protect the water bound macadam surface from quick deterioration to obviate the dust nuisance and to afford a smooth riding surface with lesser amount of wear and tear of the vehicles. The methods that have been evolved to achieve this have also led to economy in the cost of maintaining roads besides attaining the desired object. A large mileage of bituminous surfacing was done mostly under the maintenance programme, diverting the funds available under the Plan for other improvements.



Gatana Bridge—Ambasamudram-Alangulam Road

Second Five-Year Plan

Though the progress has been well up with the programme, it is still felt that the First Five-Year Plan has met only a fraction of the present Highways needs. To provide for the Highway of to-morrow adequately improved and properly correlated, to form a unified safe and economic transport system, the Second Five-Year Plan was drafted. The provision made in the Second Five-Year Plan will go a long way to establish an improved communication system in this State reaching all the villages in interior having a population of over 500. The villages of smaller magnitude will be connected under the various development programmes such as National Extension Service, Community Projects, Local Development Works which are now being worked out. The improvements of these numerous feeder roads, the construction of culverts and bridges on these will be included in the Third Five-Year Plan. It is proposed in the Second Five-Year Plan period to widen the National Highways to provide for the two lane carriageways at least in heavily trafficked stretches if not in the entire system. The following will be the distribution of funds for State and other roads, in the Draft Second Five-Year Plan :—

	LAKHS. RS.
1. State Highways (Government Roads)	347
2. Other Roads (District Board Roads)	347
3. Tools and Plants	100
4. Establishment Special Staff ..	56
Total ..	850

It may be mentioned in this connection that the scheme submitted by the department for a comprehensive development was at a total cost of Rs. 1,800 lakhs for roads other than National Highways. But due to financial stringency and the consequent restriction in the allotments, the expenditure target of the programme for roads other than National Highways has to be cut down to Rs. 850 lakhs as shown above. However, works to the extent of twice the amount are proposed to be sanctioned and put under execution during the Second Five-Year Plan period, restricting the expenditure to Rs. 850 lakhs, carrying the balance as spill over for the Third Five-Year Plan period. The schemes under the Central Road Fund Works proposed will cost another 160 lakhs. With the targeted expenditure of Rs. 622·19 lakhs, the schemes for the National Highways in the Second Five-Year Plan will consist of about 93 major and minor bridges and culverts and 38 other improvements at the cost of Rs. 289·12 lakhs and Rs. 52·21 lakhs respectively. About 1,202 miles of roads will be provided with bituminous surfacing (including widening carriageway) at a cost of Rs. 159·84 lakhs and about 121·02 lakhs will be spent to provide 141 miles of cement concrete roads.

The development of West Coast Road is another major project commenced in the First Plan period and is at full swing at present which constitutes the main artery along the West Coast for economic, commercial and industrial development of that region. The project is estimated to cost Rs. 283 lakhs. Already the bridge over Bharathapuzha at a cost of Rs. 22 lakhs in Malabar district and Payyasani Bridge in South Kanara district at a cost of Rs. 11·5 lakhs have been completed. The decking over the Railway bridge at Baliapatam in North Malabar, a long felt need, was also completed under this scheme. Bridges over Nileshwar, Karingode, Perumbai, Kuppam and other rivers are in progress. All these works are being taken up with the aid of the Government of India.

Inter-State roads

The scheme for the development of Inter-State roads of economic importance under the grants-in-aid of the Central Government consists of 21 major works costing Rs. 145 lakhs. Works to the value of Rs. 35 lakhs will be completed before 1955-56 and the balance of works costing Rs. 110 lakhs, to complete the remaining parts of scheme will be carried out in the first two years of the Second Five-Year Plan.

Mention must be made of the landmark in the history of bridge construction in this State and for that matter the whole of India, viz., the construction of first prestressed concrete road bridge near Chingleput, on National Highway-5 being the first one of its kind, in India. A large bridge across

Coleroon adopting a similar technique of the pre-stressed concrete on a more daring design is under construction and will be completed within about a year. The Madras State can well be proud of having developed the new technique of constructing roads, utilising the locally available soil materials where the conventional construction materials such as soling stone, granite, etc., are rare and costly. More than 50 miles of stabilized soil roads have been constructed at lesser cost than usual method. One more project of stabilized soil road construction for a length of about 12 miles is in progress between Kovalam and Mahabalipuram.

Equipments

A number of equipments are essential for the use of the field Engineers for a speedy and economic execution for the various projects. The Madras Highways Department has, therefore, organised a central wokshop at Guindy solely to attend to the repairs of all the departmental equipments such as road rollers, asphalt and concrete mixers, road graders, bull dozers, etc., and also the manufacture of bearings for bridges, asphalt-mixers, trailers, etc. Much headway has been made in manufacture of a few important equipments like sheepfoot roller and pneumatic tyredrollers, specially required for soil stabilization works. The installation of a well-equipped workshop to meet the increased demands of the various units of the department is included in the Second Five-Year Plan.

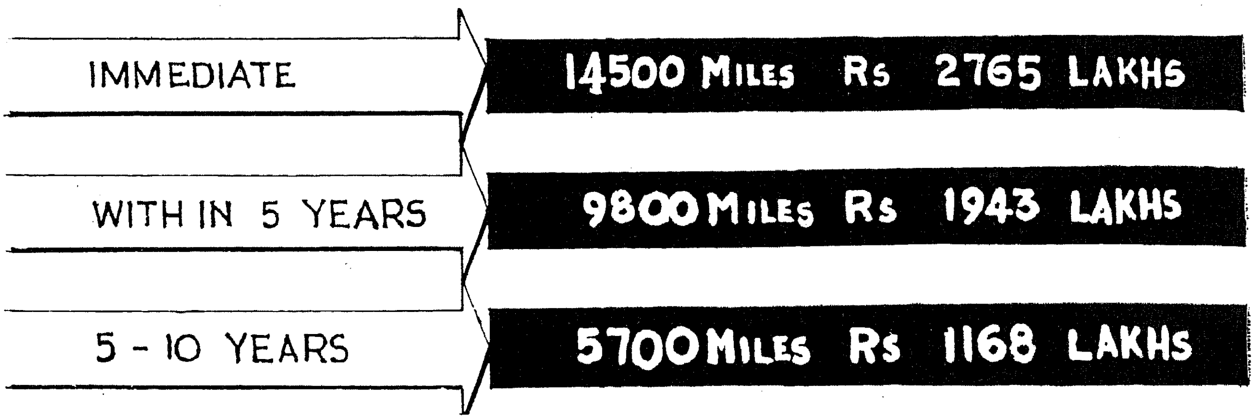
Research

In this context, the need for a research station for the assimilation and developments of new knowledge and technical information has not been lost sight of. A sum of Rs. 13 lakhs has been sanctioned for starting the research station for the Highways Department and arrangements are under way to start the construction of necessary buildings to procure the equipment and machinery required for the purpose.

In short, the Development of Highways in the Madras State since the formation of the Highways Department in 1946 can be made clear from the table below which shows the past condition, present position and the anticipated future development with regard to the mileage of various road surfacings.

FIG 1.

COMPREHENSIVE P. W. R. D. SCHEME.

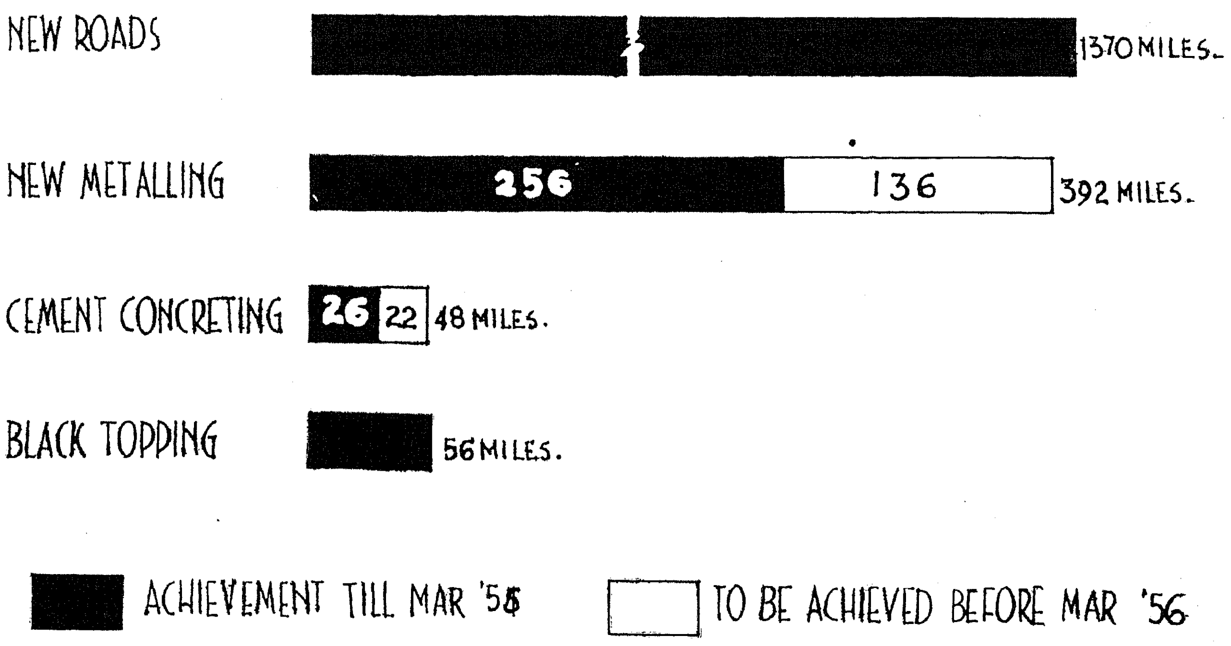


	CEMENT CONCRETE (MILES).	BLACK TOP (MILES)	NEW METALLING (MILES)	NEW ROADS (MILES)	BRIDGES COST Rs. IN LAKHS.
IMMEDIATE	500	4000	7000	3000	800
WITH IN 5 YEARS	300	3000	5000	1500	600
5-10 YEARS	200	3000	2000	500	400

FIG 2.

Programme and Achievement

NATIONAL FIRST FIVE YEAR PLAN (1951-52 TO 55-56)
(INCLUDING NATIONAL HIGHWAYS).

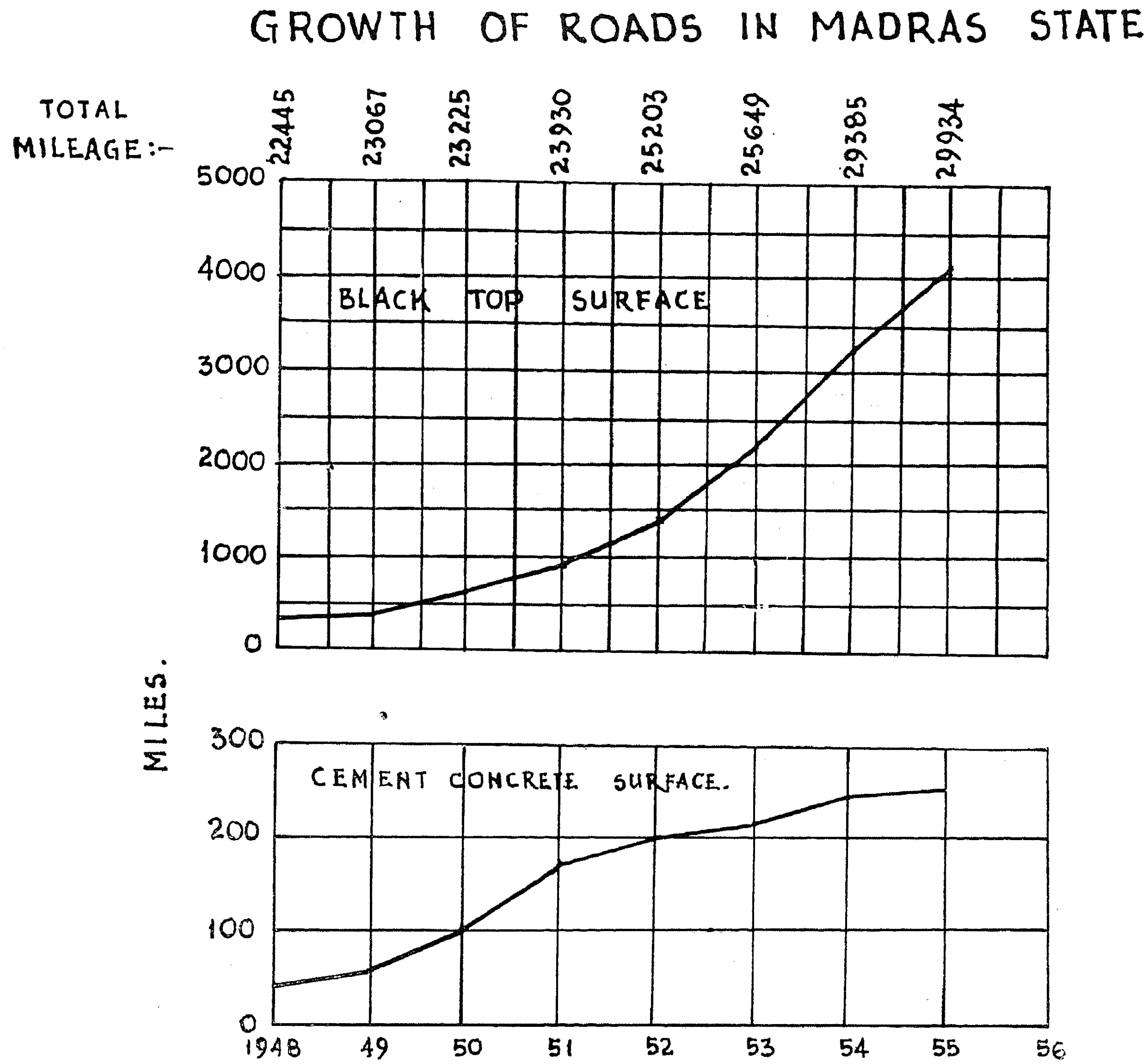


TOTAL AMOUNT ALLOTTED FOR ROAD DEVELOPMENT — Rs 358 LAKHS
IN THE PLAN INCLUDING BRIDGES

AMOUNT SPENT TILL MAR 55 Rs . . . . — Rs 259·03 LAKHS
INCLUDING BRIDGES.

	In 1947.	*As on March* 1955.	*At the end of Second Five-Year Plan.*
	MILES.	MILES.	MILES.
1 Cement concrete Road	51	246	490
2 Blacktop Road	314	4,041	6,020
3 Water Bound Macadam	13,656	13,078	12,042
4 Unmetalled Road	8,424	9,018	11,313
Total ..	22,445	26,383	29,865

FIG 3.



After 10 years, the following will be the pleasant picture of Madras Highways provided of course enough funds are placed for the much needed road development :—

		MILES.
Cement-concrete Road	.. ..	1,200
Blacktop Road	.. .. ..	12,000
Water Bound Macadam Road	..	14,000
Unmetalled Road ..	.. ..	4,000

and bridges over almost all river crossings.

The Develpoment of Highways at the tempo as contemplated, will accelerate the various developmental activities in State, contribute towards the stabilization of the economic system, exercise most influential nationalising force and in short reflect the progress of the Nation.

The Public Servant : His Outlook on Life

W. R. S. SATTHIANADHAN, I.C.S.,
Chief Secretary to Government.

THERE seems to be no exact definition of a 'public servant' in the wide sense of the term. The Indian Penal Code has defined a 'public servant' in a restricted sort of way; but, for the purpose of this chatty article, I should like simply to define a 'public servant' as one who is in the service and employment of Government.

Of late, there has been a spate of articles with reams of platitudinous exhortations to public servants. They have been asked to be upright, honest, hardworking, fair in their dealings, amenable to discipline and so on. Platitudes these may well be, but they are none the less true and constitute the bulwark of a public servant's equipment. But it is often erroneously assumed that the mere possession of these estimable qualities is sufficient to make good as a public servant. It is to refute such a supposition that I venture to indulge in the following rather rambling observations.

It is well known that a large number of public servants choose their vocation, not because they are enamoured of the work, but because it affords safety and a sure future free from worry. The public servant possesses a steady income, followed usually by a pension; he has to face none of the uncertainties of those who earn their livelihood outside the Government departments, such as in business, the legal profession, the private medical profession and the like.

The Two Types

I often wonder why it is that a particular public servant, fully equipped educationally and properly trained according to prescription, should often prove a dismal failure, while another, equally well equipped, should prove a signal success. I cannot but feel that a large number of Government servants are doing their work quite well no doubt, but in a thoroughly routine manner, not really interested in or anxious to leave the imprint of their personality upon it, feeling their daily routine of work irksome and uninteresting and reluctantly doing only that much work as will earn them their pay without getting into trouble. They, in fact, exhibit a strange anxiety to emulate the habits and characteristics of the common or garden vegetable! Others, on the other hand, are zestfully interested in their work, anxious to make a mark, keen on pushing through their tasks with expedition, and are always thinking and planning ahead.

Transformation of the Indifferent

A Government servant when he enters upon his duties, is equipped with certain qualities. He has had a family upbringing, inherited traits from his parents and grandparents, passed through a school or college education and come into contact with certain situations and people. All these environmental influences taken along with his inherited traits, go to make the man what he is. These contrasts are, to my mind, very largely due to the type of upbringing people receive in their own homes, though heredity no doubt plays no small a part. Some children have been fortunate in their parents, who with wise understanding have trained them in all the qualities of good conduct and disciplined citizenship. Others, alas, have not been so fortunate and this indifference or incapacity on the part of parents seems the basic reason why the children neglected in their pliant youthfulness grow up to be misfits, particularly in a Welfare State. The question is whether, at the stage when a person has reached mature manhood and has entered upon his duties, it would

be possible to change his conduct and outlook from the negative into the positive. From my own experience in dealing with my subordinates, I have found that this transformation is not merely a possibility but it is a certainty in a majority of cases, provided of course that the "boss" has the capacity, patience and wisdom by most sympathetic and careful handling to transform an indifferent type into a first class public servant. This can and has frequently been done.

One cannot sufficiently condemn the very common complaint made by certain officers that they are unable to turn out good work in their departments because of the poor quality of their staff. He is indeed a poor general who complains about his men. Now, this remodelling of the staff is an art in itself. Mere harsh words won't do. Violent punishment is of no use at all. The first thing to do is to study the psychology of the individual and then, by precept, patient teaching, admonition and—I stress this point—by praise whenever praise is due, we can gradually turn him into an excellent worker. Discipline no doubt must always be maintained and punishment is necessary where it is richly earned; but a timely word of praise and encouragement for good work is as essential in sound administration. Above all the Administrator should never stifle individuality in his subordinates. A quotation from *L. Urwick* published in the Indian Journal of *Public Administration* bears full repetition.

> "The greatest crime the administrator can commit is to be too authoritative, too impatient of criticism and discussion, too quick to resent as disloyalty frank difference of opinion as to policy. Disloyalty arises when decisions have been taken, in lack of energy in implementing them, never in the process through which they are formulated. To treat opposition as something to be crushed or swept aside is to start the insidious process by which candid officials are turned into 'Yes-men', creatures who first enquire what will be 'liked' by their superiors before formulating their own views, who have lost the taste for honesty when thinking about the affairs of the organization. Once that process is started it will corrupt a whole undertaking like a leprosy. The direction will be robbed of the greatest contribution the personnel can make to the undertaking, unbiased and fearless statement of the best thought of which they are capable. Enthusiasm will be stifled, ability frustrated and energy turned inwards to concentrate on self-seeking. The administrator who gives way to the temptation to use his authority to suppress rather than to develop the views of his subordinates is committing the sin against the Holy Ghost."

Inertia

Coming now to the inertia which so often overtakes our public servants like a creeping paralysis, how can it be overcome? I feel that a Government servant cannot really be regarded as a fine type unless he is continuously being driven to do good and honest work by an inward urge, that is to say, his own nature should drive him on to reach continually for excellence. The advice of one whose opinion I value highly, remains indelibly printed in my mind. "In doing public service, do not seek for praise from the powers that be or for wealth, titles or public recognition. Your reward must solely lie in self-satisfaction on good and honest work done and in thus earning the lasting gratitude and affection of the poor and needy." Such advice, if taken to heart will surely go a long way to make a good public, servant.

We, public servants, if we are not to die of boredom, must strive to make our work interesting. We have to develop a strong sense of humour. No doubt, public service, generally speaking, especially in offices, is a routine grind with little sunshine in it. But it is extraordinary how one can derive pleasure and real enjoyment out of one's work if only one seeks for it and vitalizes the work and makes it a living thing. Hard work never killed a man. When on duty, let us, public servants, bring to our work all the sustained concentration and energy we are capable of, attune ourselves to the rhythm and swing of public administration and weave into the pattern of our tasks whatever they may be some bright threads of humour and human interest. After our day's work is over, do let us forget completely about it, relax, go and play, improve our general

knowledge and return next day to our duties with a light heart and a fresh and clear mind. We are not a race apart from others. The public servant must realize that "his capacity for innocent enjoyment is just as great as any honest man's." Nothing disgusts me more than when a subordinate of mine who has done a piece of good work when thanked for it, replies, "It is my duty, Sir." I consider this reply thoroughly nauseating. Good work should be his duty no doubt but it should be equally a pleasure in addition to being his duty. We are occasionally fortunate in coming across bright patches in our official life, as when a clerk of mine applied for casual leave on the plea that he had a cold in both noses!

Primary Duty to the Public

The very name 'public servant' clearly indicates that his primary duty is to serve the public. A good way of realizing this is for the public servant to put himself in the place of the petitioner and try to visualize how the petitioner would react to the way in which he is dealing with his petition. We should remember that practically every file originates from a petition from some remote corner or other, and, more often than not, from some poor and needy man or woman. Only when the public servant can visualize with what eagerness the petitioner is awaiting a reply to his petition or appeal and how much his welfare and happiness for the future often depend on the nature of the reply, then only will the public servant become galvanized into putting all he has into the work, trying his utmost within the rules to help and that as soon as possible.

The Tough File

There is a tendency on the part of us, Government servants, to take the easy way. Whenever we are confronted with a difficult file, we are

Soviet Leaders in Madras

tempted to put it aside or to pass it on to some other department to gain time, or to make a series of unnecessary references to subordinate offices and then wait lethargically till all the replies are received, which might take years. The way to deal with a tough file is to attack it boldly from the very outset, irrespective of the difficulties. It is a good rule to get close to men and matters. Only by plunging boldly into life can we effectively solve our complex problems. Never skirt around a difficulty. I have coined a phrase for myself and it is "proximity is the secret of life."

We, public servants, are living in stirring times and should thank God that we have been privileged to take a part, however insignificant it may be, in shaping the destinies of and in building up sound traditions for our young nation. It is for us, 'public servants' to dispel all fear and suspicion of ourselves from the minds of our non-official friends and to make them trust and, above all, to like us. In order to do so, let us approach them with no sense of superiority whatsoever. Remember it is only by fortuitous circumstance that you and I hold the offices we do and possibly, given the same opportunity, many a non-official would have done better than we in the very offices we are holding. So, we and non-officials must look upon each other as brothers. We have to co-operate in the real sense of that word and real co-operation can never materialize without mutual regard and affection and without the complete absence in ourselves, public servants, of snobbery, false pride and a nauseating superiority complex. We, public servants, must serve the public in a truly missionary spirit of genuine brotherhood. If all of us realize this and act accordingly, I am sure we will be laying the solid foundations for a magnificent Welfare state.

Above all, let us, public servants, never lose our individuality. Let us realise that we are men and women with all the vital soul and lambent fire of human beings as distinct from animals and machines. Emerson puts it in his inimitable way thus :

> "The common experience is that the man fits himself as well as he can to the customary details of that work or trade he falls into, and tends it as a dog turns a spit. Then is he a part of the machine he moves ; the man is lost. Until he can manage to communicate himself to others in his full stature and proportion, he does not yet find his vocation. He must find that an outlet for his character, so that he may justify his work to their eyes. If the labor is mean, let him by his thinking and character make it liberal. Whatever he knows and thinks, whatever in his apprehension is worth doing, that let him communicate, or men will never know and honor him aright. Foolish, whenever you take the meanness and formality of that thing you do, instead of converting it into the obedient spiracle of your character and aims."

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Progress of Community Development in Madras State

N. E. S. RAGHAVACHARI, I.C.S.,
Director of Community Development.

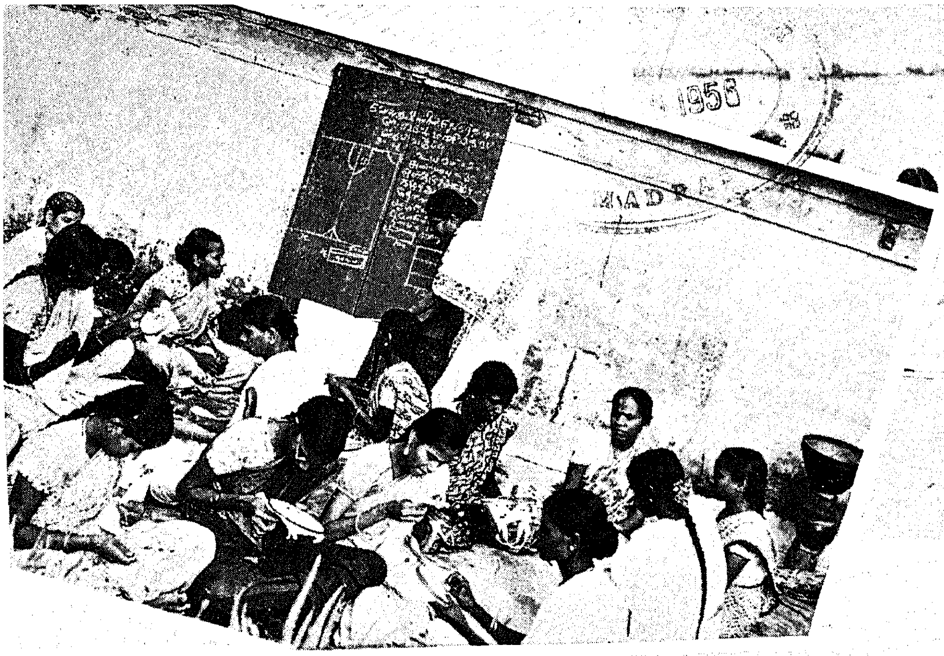
UNTIL a few years back, visitors to India were interested in learning something about our ancient culture. They would visit some of our famous temples, the frescoes of Ajanta, the Taj Mahal at Agra and exclaim what a wonderful past India has had. They would in contrast either refrain from commenting on the present or express their sympathy for our present plight. India used to send students and scholars abroad to study modern developments in other countries, but very few students used to come to our country to study the modern developments here. But within the last few years, there has been a significant change. Visitors to India are no longer content with looking at our past. They are more interested in seeing our present day activities, to see our acheivements under the Five-Year Plan and to witness the silent revolution which is taking place all over the country. Students come to this country, sponsored either by their Governments or by International agencies to study developments in this country under the Five-Year Plan. Last year, the United Nations under its Technical Assistance Programme sent a team of officers from a number of Asian countries to study the working of the Community Development Programme in this country. A team of officials from Indonesia are now in this country to study the organization of the programme in detail with a view to its introduction in their country. A team of high ranking officials from Afghanistan are also now in this country studying the Programme.

A Bold Conception

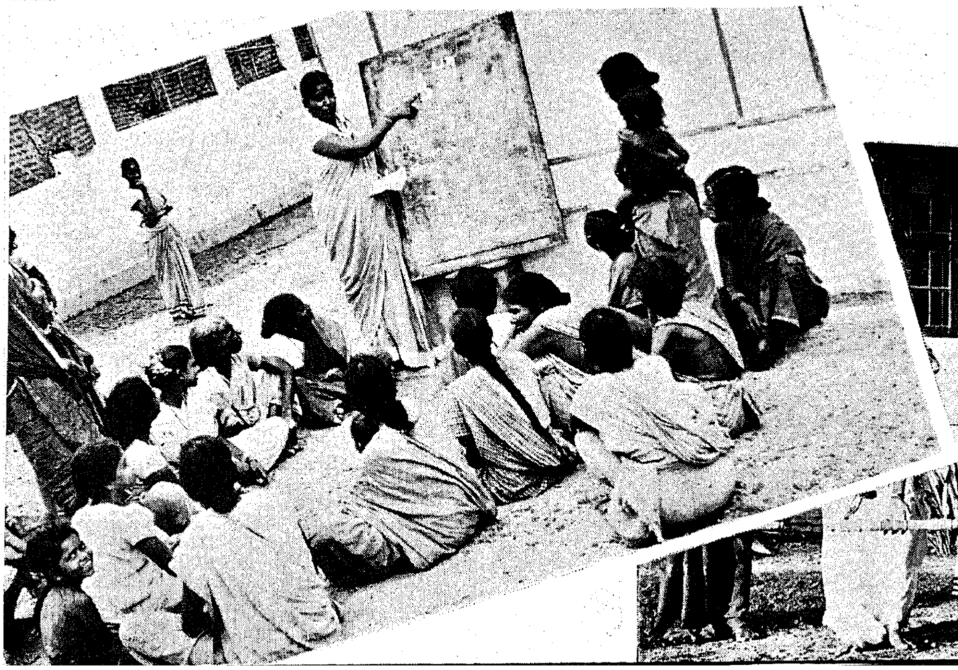
What is this Community Development Programme ? What have we achieved that we should attract all these visitors ? The Community Development Programme is one of the bold conceptions of the framers of the First Five-Year Plan. It aims at revitalising the villages so that largely by a process of self-help and assisted by the Government in the shape of technical services and supplies, they can march forward. Our villagers who had grown to depend too much on Government for the provision of amenities are made to realise that they should exert themselves and act together in a community spirit. The villagers are made to realise that without increased production their standard of living cannot be improved and that to achieve this they must exert themselves.

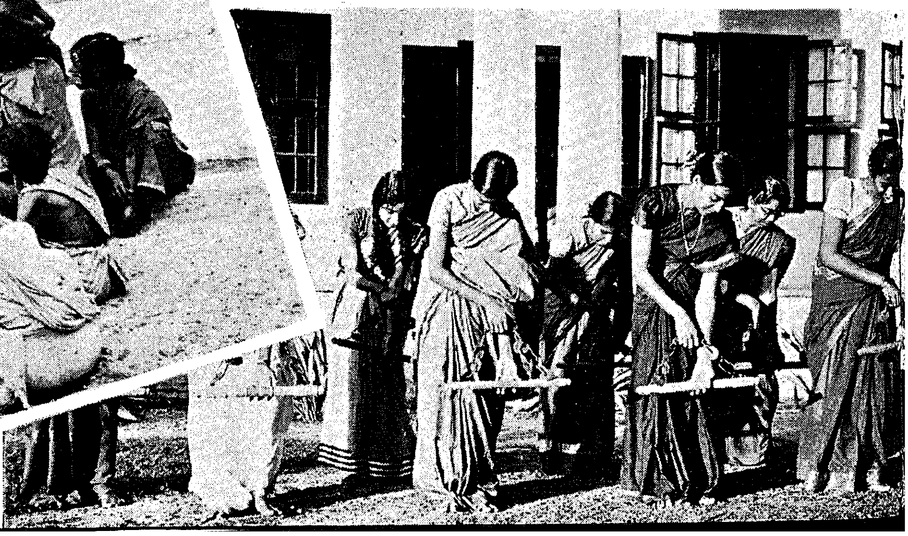
The programme is thus essentially a people's programme conceived and executed by the people themselves. To make the programme a success, people's organizations have to be built up in every village. Wherever panchayat boards have been constituted and are fully representative of all sections of the population, these are entrusted with the task of preparation and execution of the village plan. In other cases, Development Panchayats or Grama Seva Sangham have been constituted for the purpose. In order to develop village leadership, special village leaders' training camps are held. Such camps have been held in the last twelve months in every block. To assist in the drawing up of the integrated plan, advisory committees have been constituted for each block with a certain number of non-officials as members besides the official members. In order that these non-official members may fully understand the ideologies of the programme and thus assist in its effective implementation,

COMMUNITY DEVELOPMENT— PEOPLE'S PARTICIPATION



WOMEN'S WELFARE





special seminars for the non-official members of the Block Advisory Committees were held during the last twelve months.

Success so far

To what extent have we succeeded in our objectives. Firstly, agricultural production has increased considerably. People have realised the value of chemical fertilisers, with the result that the demand for fertilisers has increased considerably. It is a matter for gratification that Madras State leads the rest of India in the quantity of fertilisers distributed in the C.P. and N.E.S. areas. At the same time, the use of green manures has increased especially in areas where the value of such green manures was practically unknown some years back. There is a great demand for improved seeds and with the introduction of the vllage seed farm system, it is expected that, in a few years, every field in the State will be sown with improved seeds. There has been a significant increase in the area under vegetable and fruit cultivation. With a view to improve the diet of the people and to give them a supplementary income, pedigree birds have been supplied and there is an increasing demand for them. Large areas have been brought under irrigation with the help of loans for sinking wells and for installation of pumpsets.

Contribution instead of Petitioning

In regard to provision of village amenities, considerable progress has been made. Several miles of village roads have been formed by the villagers themselves and culverts have been provided for these from the project funds. Wells have been either newly constructed or renovated. Community recreation centres have been started.

In regard to the provision of these amenities, special mention must be made of the great awakening among the people. In the old days when people required these amenities they used to depend entirely on the Government or the local body. They would send innumerable petitions and, in most cases, these petitions were of no avail either due to want of funds or because the machinery of Government moved rather slowly. Now, people come forward with offers of contribution for part of the cost by way of cash, labour or materials and they find that the organisation in the Community Projects and the National Extension Service blocks is prepared to assist in the quick execution of works. As and when works in one village are executed, the neighbouring villagers who might have been slow in the first instance rush forward with offers of contribution for works for their own village. In some of the blocks, the funds available are found to be insufficient to meet all the demands. The value of the people's contribution so far has exceeded rupees fifty-five lakhs.

Special mention must be made of schemes for the development of village industries. The most important village industry to-day is handspinning. It requires very little capital, and can be taken up with a brief training. It provides part-time employment and the final product, viz., cloth can be used in the villages. Women spinning Organisers have been posted to each Community Development Block to instruct women in spinning. The Government Khadi Department supplies the cotton and arranges to take back the yarn for weaving. The initial target for each block is 1,000 charkas which will be supplied at a concessional price. There is a great demand for charkhas wherever the scheme has been introduced. In addition, a number of units have been set up to demonstrate the value of the improved Ghani or Chekku in oil pressing. A number of schemes for tanning, blacksmithy, etc., have been sanctioned by Government.

Mahila Samajams

As women have an important part in Community Development, Women's Clubs or Mahila Samajams have been organised in several villages. Women of the village gather together at these centres periodically and discuss problems of mutual interest. Here they also learn tailoring, embroidery and other useful arts. Women Social Education Organisers help in the formation of these clubs, assisted by trained Grama Sevikas.

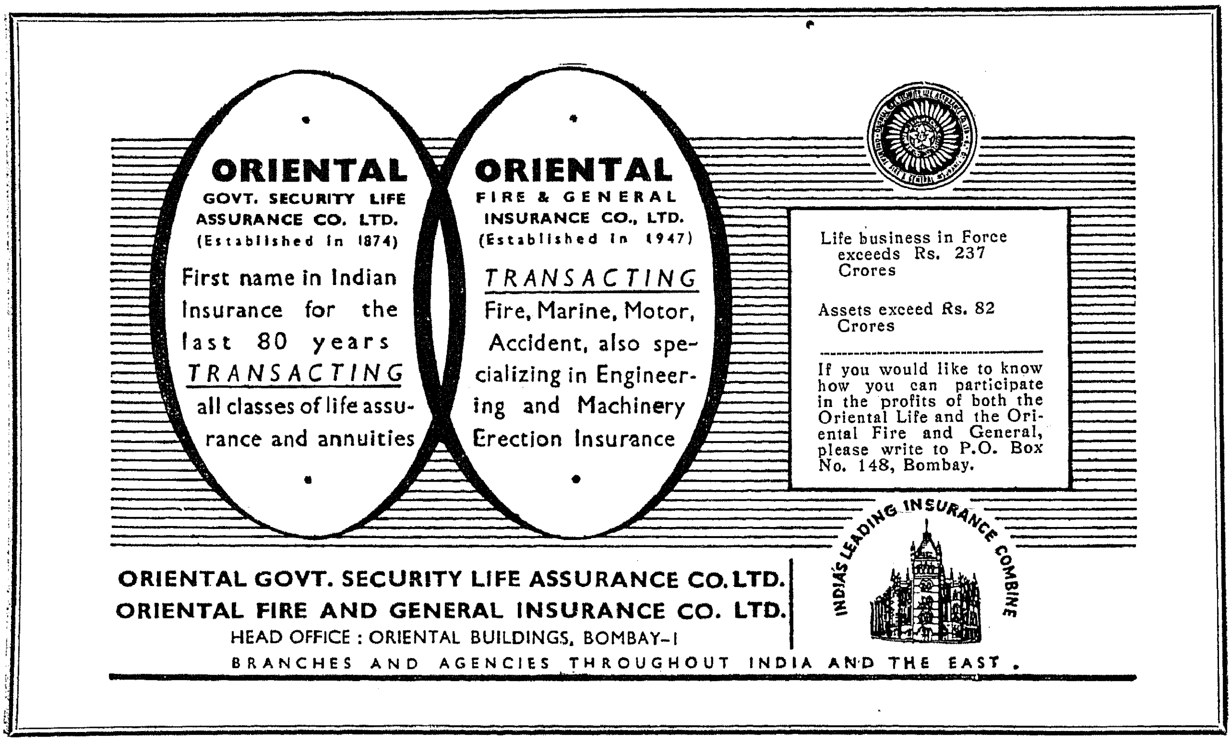
The other day a friend of mine asked me " There is so much talk about Community Development these days. Is it all mere talk or has anything substantial been achieved." My answer was that he should personally visit some blocks and see for himself. He will observe a gradual change in the attitudes of people, but those of us interested

in the programme would like to see a more rapid change. But it is not easy to effect a rapid transformation in the attitudes of people who through years of neglect have come to be indifferent to their own position. However, there is a greater realisation of the position in some of the villages than in others. In order to foster a spirit of healthy competition, a system of prizes for the best village in each block was recently instituted. The representatives of such villages received certificates from the Prime Minister during his visit to Madras on Gandhi Jayanti Day. Each selected village is given a prize of Rs. 1,000 to be utilised for some common purpose like the provision of Community recreation centres, Children's parks, etc.

In Madras State, more than one-fourth of the population is already covered by the programme. The entire State will be covered by the National Extension Service Scheme during the period of the Second Five-Year Plan. About 40 per cent of the area will be taken up for intensive development as Community Development blocks. On conclusion of the period of intensive development, each block will revert as a National Extension Service block. The entire basic staff of the National Extension Service will be continued permanently so that their services are available to the villagers.

The expansion of the programme on the large scale envisaged requires necessarily a very large number of trained personnel. Arrangements have been made to train the personnel required especially the Grama Sevak, who is the pivot of the scheme. About 600 Grama Sevaks will be trained every year in agriculture, animal husbandry, public health and other aspects concerning rural life. Similarly, the capacity of our technical institutions is being expanded to meet the increasing demand for technical personnel.

Thus by the end of Second Five-Year Plan, every village in the State would have had the benefit of the Community Development Programme. Every villager would have had by then an opportunity of improving his standard of living. He can hold his head erect and be proud that he is a citizen of Free India.



Land Reforms

M. A. MANICKAVELU,
Minister for Land Revenue.

THE question of land reforms has been engaging the attention of the Government ever since Independence. The first step in that direction was the abolition of the zamindari system which had not only interfered with direct relationship between the State and the ryots but had also subjected the peasant to various exactions. Enactment of legislation to replace the zamindari system and a ryotwari settlement of all the estates are however matters which take time. As it was essential meanwhile to grant some immediate relief to estate ryots, the Rent Reduction Act was passed in 1947 in order to reduce rents payable to landholders approximately to the level of the land revenue assessment in the ryotwari areas. Up to the end of November 1955 over ten thousand villages have benefited by this measure.

More important was the Madras Estates (Abolition and Conversion into Ryotwari) Act, which was passed in 1948. This Act empowers the Government to take over, subject to the payment of reasonable compensation, all estates except those inam villages in which the original grant consisted of both the melwaram and the kudiwaram. Provision has also been made in this Act for the grant of ryotwari pattas to estate ryots after the estates are surveyed and settled on ryotwari principles.

Estates Notified

2,674 estates with an area of 10,500 square miles have been notified under this Act and all of them except 71 with an area of 37 square miles have been taken over by the Government up to 31st October 1955. There are only 68 estates to which the Abolition Act is applicable but which have not yet been notified for one reason or other. In the estates taken over 7,521 square miles have already been surveyed and ryotwari settlement has been introduced in eight estates. With the introduction of this reform the last vestiges of feudalism can be said to have been wiped off ushering in an era of contentment and self-reliance in the former estate areas which form one-sixth of the entire State.

Rent Courts in Malabar

In Malabar there was already a tenancy legislation dating back to 1930 providing for the fixation of fair rents, fixity of tenure, etc. Applications for fixation of fair rent had however to be made to the Civil Courts. In 1951 and 1954 certain amendments were made to the Malabar Tenancy Act which in addition to the grant of greater fixity to tenants and the reduction of the rent payable by them, also provided for the constitution of Rent Courts presided over by Revenue officials to determine the fair rent payable in disputed cases. This machinery proved so popular that as soon as the amending Act for the constitution of Rent Courts came into force there was an avalanche of applications for fixation of fair rents by these Courts. The Government have therefore constituted as many as 18 Rent Courts in the Malabar district and in 33 villages of South Kanara district and these Rent Courts have up to the end of October 1955 disposed of over 18,000 out of about 34,000 applications received by them.

Tanjore Act

Barring the West Coast districts, leasing of lands is more common in Tanjore which is the granary of the State than in any other district. Hence before attempting tenancy legislation in other districts the Government decided in 1952

to devote their immediate attention to the strained relations which were then prevailing between some of the mirasdars and their tenants and in some cases between the mirasdars and their customary farm labourers or pannaiyals. The Tanjore Tenants and Pannaiyal Protection Act, 1952, was enacted and this has since been extended to certain parts of South Arcot district also. This Act gives security of tenure for five years to the cultivating tenants and also fixes the maximum rent which they should pay. The Act also provides for a machinery to settle disputes between the cultivating tenants and the land-owners and also between them and the pannaiyals. This Act has restored peace in an area where till then ill-feelings had threatened to retard agricultural production. Up to the end of June 1955 about 26,000 applications have been received under this Act and orders have been passed on over 23,500 of them.

I have indicated briefly some of the major reforms which have been brought into force after independence. Most of them were implemented during the First Five-Year Plan period but the Government are well aware that many more steps have to be taken before we reach our goal of a welfare State. Comprehensive land reforms are under consideration but for the success of every reform it is necessary to create an atmosphere of peace and calm. That is why the Government have brought forward temporary measures to prevent arbitrary eviction of cultivating tenants in places where they have no statutory rights. The South Kanara Cultivating Tenants Protection Act, 1954, and the Madras Cultivating Tenants Protection Act, 1955, are only a prelude to better things in store. But it is as well to remember that Land Reforms Legislation is not a magic wand which can transform the impoverished country side into a paradise. That can be done only by hard work. Blood and tears can be avoided but toil and sweat are essential. Fortunately there is no dearth of willing hands and let us hope that with our united efforts we shall make our dreams come true and transform this land into a prosperous and happy one.

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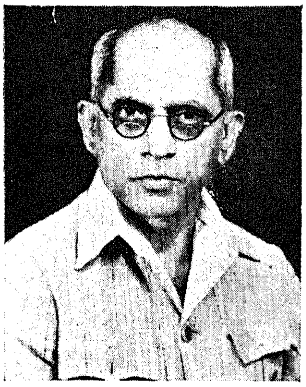


Development of Health Services

A. B. SHETTY,
Minister for Health.

PUBLIC Health administrations in India are generally working under most difficult conditions. We have tremendous health problems, the health personnel is inadequate and the financial resources of the country are limited. In spite of the modest provision made for improvement of health conditions under the First Five-Year Plan in Madras State, five schemes are being implemented during this period in addition to the usual activities of the department and these are detailed below.

Malaria Control

The Malaria Bureau of the department with the assistance of the Central Government under the National Malaria Control Programme, has implemented 23 malaria schemes and controlled malaria in most of the malarious tracts in the State. The scheme has benefited a population of 3 millions living in an area of 10,000 square miles. The estimated expenditure on this scheme during the First Five-Year Plan period will amount to 499 lakhs.

Nutrition Work

The Nutrition Branch was reorganized in 1950. It carries out investigations on the composition of food, conducts sample surveys on diets and nutritional status and trains various health and other personnel in nutrition. Ameliorative measures by way of distribution of skim milk, multivitamin tablets, shark liver oil, etc., to mothers and children at maternal and child health centres and hospitals were also undertaken. This scheme has been extended to school children in Community and National Extension Service areas. Intensive education on nutrition was carried out by film shows, demonstrations, talks, lectures, and nutrition exhibitions along with general exhibitions. The estimated expenditure on this scheme during 1951–56 will be Rs. 3·33 lakhs.

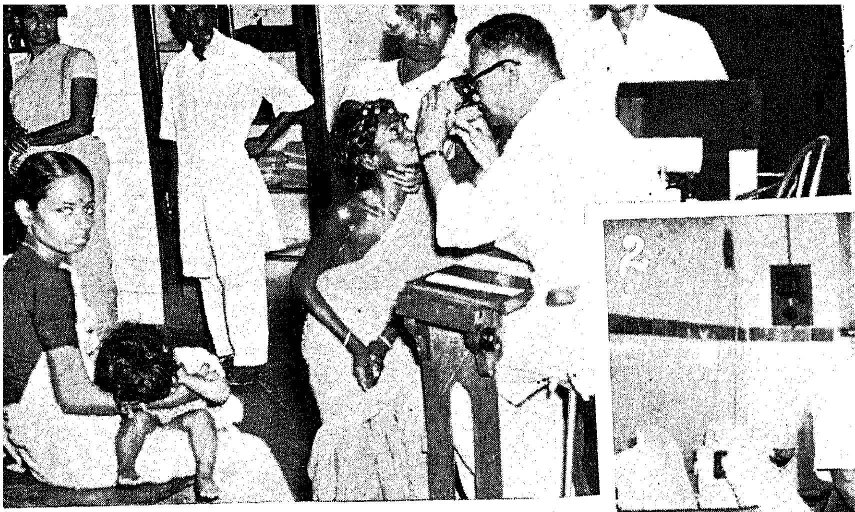
Health Education and Publicity

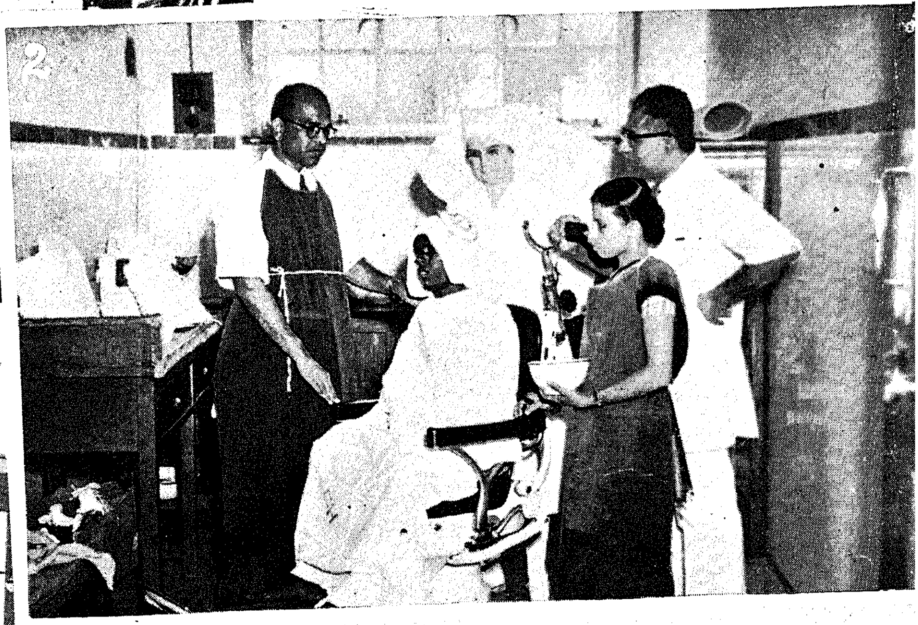
Health education is admittedly a most effective method of raising health standards. In 1954, the activities of the Bureau of Health Education have been expanded and a Health Officer has been placed in charge of this work. A mobile van equipped with cinema projector and radio equipment for audio-visual education is being fitted up to enable the Bureau to participate in exhibitions organized in various parts of the State. Leaflets in English and the regional languages on various health subjects are being prepared. The estimated cost of this scheme will be about Rs. 1·36 lakhs.

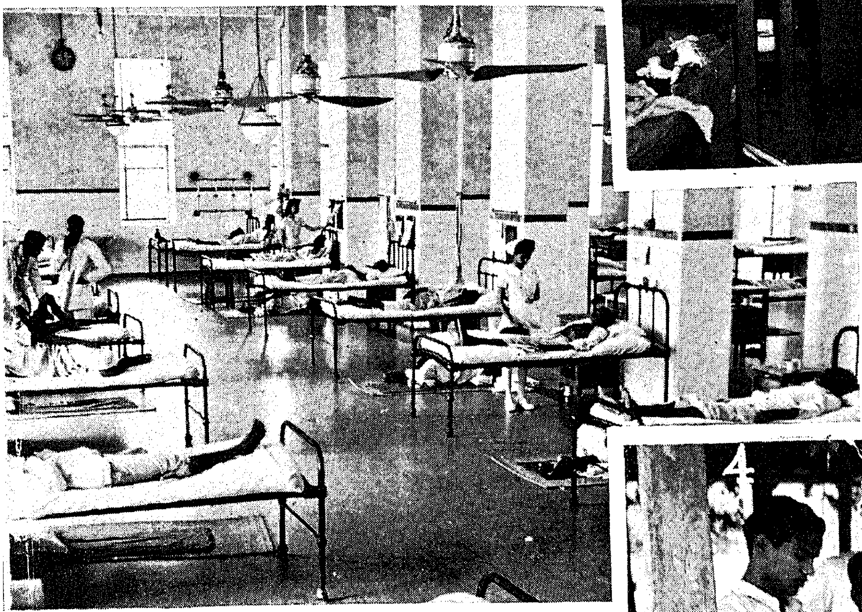
Expansion of Health Services

The Health Unit in Poonamallee area (Chingleput district) provides intensive health services to 36 villages and serves as a training ground for medical and health personnel. In order to meet the urgent need for more Health Visitors, the Government School for Health Visitors has been expanded. The Government of India has subsidized a scheme to train 60 Health Visitors in two batches within a period of three years. Proposals to construct a Health Visitors' school at a cost of Rs. 1·90 lakhs are under consideration.

Proper disposal of night soil is one method of controlling bowel diseases like cholera, dysentery and diarrhœa. It is, therefore, proposed to persuade house owners in rural areas to construct borehole latrines with water seal squatting slabs by providing tools, slabs and technical services.

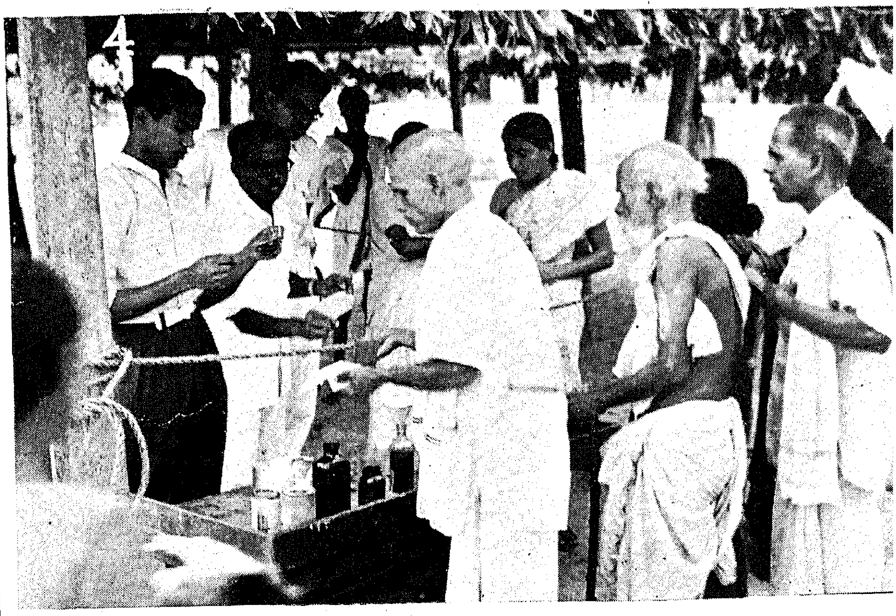


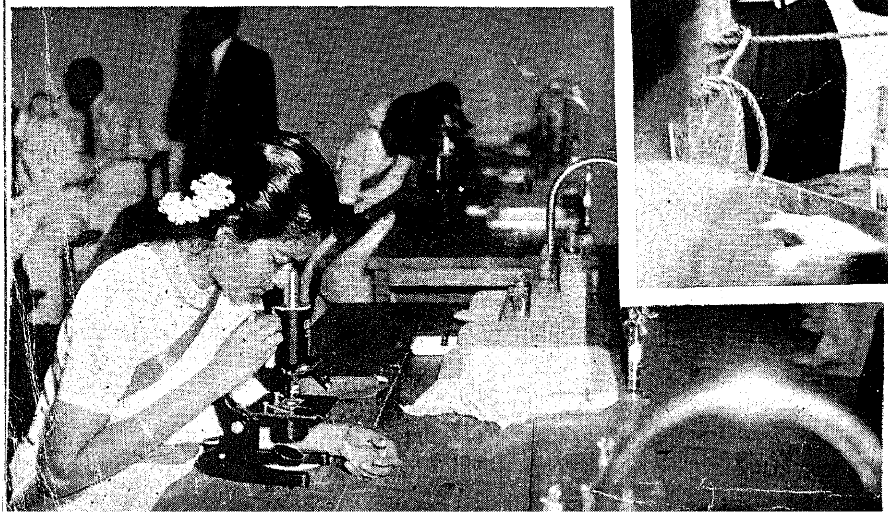




MEDICAL RELIEF

1. 2. & 3. Inside a City Hospital.
4. Rural Medical Relief.
5. Madurai Medical College.





Community Project and National Extension Service

With a view to speed up the pace of progress on all phases of rural development, Community Projects were organized in October 1952 in blocks each comprising 100 villages with a population of 66,000. In each of these blocks, a primary health centre was to be established with medical and public health staff to afford medical relief and institute preventive measures in the areas around the centre. So far primary health centres have been organized in 17 out of the 35 blocks and steps are being taken to open such centres in all the other blocks. In October 1953, the National Extension Service Scheme was launched and so far 38 of them have been opened in blocks of villages. As the public health work in those blocks was not satisfactory, it is now proposed to establish primary health centres in the National Extension Service areas also. Sanction has already been given for opening such centres in 10 of the National Extension Service Blocks.

The Second Five-Year Plan

The schemes for malaria control, health education and publicity and improvement of environmental hygiene undertaken in the First Five-Year Plan have been included in the proposals for the Second Five-Year Plan also on a broader basis. Provision has been made for some additional Public health schemes in the Second Plan and the total estimated expenditure during this period will amount to Rs. 190·77 lakhs.

National Malaria Control Programme

This scheme will be extended to cover all the malarious areas in the State, including Madras City. The cost of the scheme is expected to be Rs. 78·35 lakhs.

National Filaria Control Programme

It is proposed to extend this programme so as to cover the entire population exposed to the risk of filariasis. The districts of Tanjore, South Arcot, Chingleput, South Kanara, Malabar, Tiruchirappalli, North Arcot and Ramanathapuram where filariasis is prevalent will be benefited by this scheme. The total cost of the scheme is estimated at Rs. 52·25 lakhs.

B.C.G. Programme

It is proposed to provide six additional B.C.G. field teams so as to cover the entire susceptible population of about 16 millions in the State. The provision required for the implementation of this scheme will be Rs. 13·70 lakhs, spread over a period of five years.

Maternal and Child Health Services

We have at present 616 maternity and child-welfare centres and 84 maternity homes. Probably no other State has developed this service to such an extent. Provision has been made in the Second Five-Year Plan for 600 additional centres in the rural areas at the rate of 120 per year. This will cost about Rs. 21·72 lakhs and benefit a population of about 36 lakhs.

Mobile Epidemic Unit

Two mobile van units and five jeeps with trailers have been proposed for carrying out anti-cholera inoculations and epidemic control measures and for distribution of free food supplements, vitamins, etc., to those needing them at a cost of Rs. 4·65 lakhs.

School Health Services

Medical inspection of school children in secondary schools is contemplated in Madras City and in 18 centres to be selected in the districts. These centres are expected to serve about 1·5 lakhs of school children and the scheme will cost Rs. 8·10 lakhs spread over the Second plan Period.

Public Health Propaganda and Publicity

Further expansion of this scheme and the establishment of a Health Museum in Madras City will be undertaken at a cost of Rs. 5·32 lakhs.

Environmental Hygiene

Under this scheme, it is proposed to take up soil sanitation work based on the designs approved by the Public Health Board. Squatting slabs will be provided at concessional rates or supplied free in deserving cases so that house owners may have borehole latrines of a sanitary type. This is expected to benefit a population of about 70 lakhs. About 6,500 latrines will be constructed each year during the Plan period.

Planned Parenthood and Control of Population Growth

The Planning Commission have rightly put family planning and population control among the priorities in the Health Plan. The State Government have started family planning clinics in some of the big hospitals in the city and in the moffussil. Nine clinics are being run by the Madras Corporation. Maternity centres also will be taking up this work. Medical graduates will be given training in family planning work during the period of their house surgeoncy. Nurses and maternity assistants also will receive such instructions as a part of their regular training course. Pamphlets on family planning will shortly be published with a view to educate the public and create a favourable atmosphere for the acceptance of family planning.

The Outlook for the Future

The limited resources available for expenditure on medical relief and preventive work makes the fixing of priorities essential in drawing up health programmes. In the immediate future, additional resources will have to be concentrated on preventive work rather than on extending curative facilities. The grant of substantial assistance from the Centre and the State for urban and rual water-supply schemes in the present year and in the period of the Second Five-Year Plan is a welcome indication of the trend of events in the future. The establishment of health centres rendering integrated medical and public health service in the Community Development and National Extension Service blocks is a recognition of the need for putting more emphasis on preventive work in the years to come.

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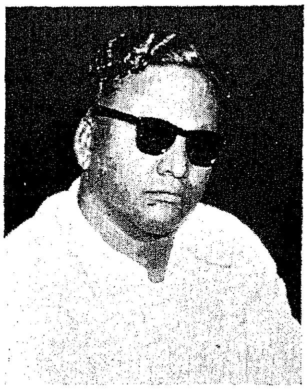


Trends in Local Administration

S. S. RAMASWAMI PADAYACHI,
Minister for Local Administration.

EFFICIENT local administration is of vital importance to the people living in towns as well as in villages. Local bodies should be regarded as complementary to the Government machinery, in that they help the State Government in building up and maintaining a welfare State on the socialistic pattern. The services rendered by local bodies to the people are basic and are indispensable for civilized life in any modern community. The need for encouraging a sound and active system of Local Self-Government is now increasingly recognized, as evidenced by the keen interest evinced by the Central Government in local administration and the Constitution of the Central Council of Local Self-Government in September 1954 by an order of the President of India.

Local Bodies and Planning

The council had at its first meeting held in Simla in June 1955, emphasised that there should be a definite place for local bodies in the Second Five-Year Plan, keeping in view their role in the implementation of local development programmes and the principles on which financial assistance was made available to them not only by the State Governments but also by the Central Government to supplement their own resources. In the preparation of village and district plans of this State, the municipalities and Class I panchayats have been recognized as the Planning Committee for their respective areas. Further, wherever panchayats exist, they are being utilized to the maximum extent for planning purposes. The plans prepared by local bodies are sent to District Collectors for incorporation in the District Plan. Panchayats particularly in the areas covered by the National Extension Service, Community Projects and Local Development Works Programmes, are forming themselves into development committees for the purpose of executing all local development schemes. A few outsiders are also co-opted to serve on these committees with a view to make the committees representative of all sections of the people in the village and to make them more competent to undertake village works programmes.

Subsidies to Local Bodies

It is intended under the Second Five-Year Plan, to subsidise local bodies by way of loans for carrying out essential schemes of public utility which are remunerative in character and which otherwise they will not be in a position to undertake. A sum of Rs. 100 lakhs is proposed to be distributed to local bodies as indicated below :—

			LAKHS. RS.
1956–57	..	..	13·00
1957–58	..	..	18·00
1958–59	..	..	21·00
1959–60	..	..	23·00
1960–61	..	..	25·00

Out of this sum, 227 markets, 48 cart-stands, 164 bus-stands and 36 slaughter-houses will be newly constructed, besides improving the existing ones. During 1956–57, the Government propose to distribute the quota of Rs. 13 lakhs as detailed in the next page.

In addition, special schemes concerning local bodies, relating to urban water-supply and drainage, low income group housing for local body servants, slum clearance and town-planning schemes have also been included in the Plan at State Level.

Roads and Bridge Works

It is also proposed to provide in the Second Five-Year Plan a sum of Rs. 3·75 crores for giving grants to District Boards for roads and bridge works. For the year 1956–57 (i.e., the first year of the Second Plan) the grant likely to be given to District Boards will be Rs. 45 lakhs as against Rs. 25 lakhs distributed in 1955–56. There will, therefore, be greater progress during the Second Plan period in the execution of road works.

Development of Panchayats

A sum of Rs. 15 lakhs will be set apart for development of panchayats during the Plan period (1956–61). It is proposed to constitute at least 6,000 new panchayats during the Plan period. The scheme also provides for better superintendence and inspection of panchayats by strengthening the existing staff and for the training of members and presidents of panchayats by conducting classes at taluk headquarters and arranging for talks by the District Officers like the District Health Officer, District Educational Officer, Deputy Registrar of Co-operative Societies and the Divisional Engineer (Highways).

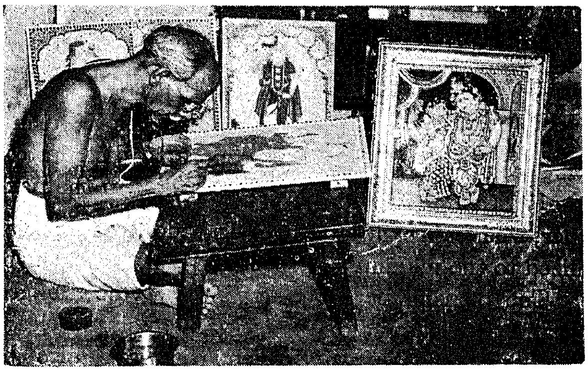
The Madras District Municipalities Act, 1920, has been amended recently to enable the constitution of a Government service for the municipal commissioners. This is intended to strengthen their position as the Chief Executive in the municipality and to enable them to discharge their duties efficiently without fear or favour.

With the passing of the Madras Land Revenue (Additional Surcharge) Act, 1955, an effective step has been taken in the matter of finding additional funds for affording financial assistance to district boards and panchayats.

The Courtallum Township Act, 1954, which has been brought into effect from 1st October 1955, is another outstanding event of the year. The Act is designed to improve the area, so that the usefulness of the Sanatorium will be enjoyed by a larger section of the masses.

The future of local bodies in the administrative set-up of our country looks bright. I must emphasise once again that an onerous responsibility lies on those serving on them to render a good account of themselves and contribute to the healthy and efficient administration, devoid of faction.

	Cart-stands.	*Bus-stands.*	*Markets.*	*Slaughter-houses.*	*Total.*
			(RUPEES IN LAKHS)		
Panchayats	0·84	1·87	1·70	0·44	4·85
Municipal Councils ..	0·60	2·62	2·95	0·25	6·42
District Boards	..	..	1·73	..	1·73
Total ..	1·44	4·49	6·38	0·69	13·00



Tanjore Craftsman at work

The last year of the first five-year plan witnessed still further expansion. During this year, six Arts colleges, five Training colleges, 49 Secondary schools, 11 ordinary training schools and 18 Basic Training schools have been opened. The reason for opening a large number of Training schools this year is to train the additional teachers required for the Second Five-Year Plan period.

Free Education

The most important landmark is the order of the Government granting free education up to Form III or standard VIII to all children of parents whose income falls short of Rs. 1,200. The beneficial results of these orders will increase year after year. It will be seen that this measure has thus provided equal opportunities for all children irrespective of caste or creed to get free education up to the age of 14 and will pave the way for a casteless society.

The value of importance of the human factor in any educational system cannot be over emphasized. Government are fully aware of the needs of teachers and have consequently decided on a scheme of Provident Fund-cum-Insurance-cum-Pension scheme, which has effect from April 1955. The scheme is to benefit all teachers under low income group whether they are serving in Elementary schools or Secondary schools. Teachers under both Aided and Local Board managements will come under this scheme. It is roughly estimated that about 90,000 teachers will be benefitted by the scheme.

The schemes included in the First Five-Year plan, the funds allotted to each and the progress of expenditure are shewn below :—

(Rupees in lakhs)

Name of the Schemes.	*Provision made in the plan.*	*Actual expenditure in 1951–52.*	*Actual expenditure in 1952–53.*	*Actual expenditure in 1953–54.*	*Probable expenditure in 1954–55 (Revised estimate).*	*Total expenditure for 1951–55.*	*Estimate of expenditure during 1955–56 (Budget estimate).*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Primary Education ..	302·40	28·89	40·50	31·81	62·62	163·82	89·50
2. University Education ..	55·54	7·30	5·79	5·01	5·30	23·40	5·68
3. Training of Teachers ..	62·07	3·61	3·67	14·80	24·14	46·22	37·44
4. Special schools for Defective children ..	45·99	0·99	1·56	1.84	1·79	6·18	1·91
5. Adult Education ..	27·86	2·50	4·94	5·27	5·69	18·40	8·01
Total ..	498·86	43·29	56·46	58·73	99·54	258·02	142·54

Expansion under the Second Plan

The schemes under the Second Five-Year Plan though not yet finalised envisage large expansion. A good number of children of school-age will be brought under instruction additionally. The provision of mid-day meals for poorer classes of children will also receive attention. Additional training facilities are proposed to be provided to produce the required number of teachers and Physical Training Instructors for the additional enrolment. For proper supervision, the Inspectorate also will be strengthened. The scheme not only aims at quantitative expansion, but also qualitatively. Some of the Elementary schools will be converted into Basic types and more multi-purpose schools will be opened to meet the different aptitudes of pupils. The teaching side of the Secondary schools will be vitalised by providing them with good libraries, laboratories and facilities for craft teaching. There are also schemes included in the plan for Visual education and training of teachers in museum technique. The Education of the handicapped will also receive greater attention during the plan period. Children's literature will be enriched. Engineering and University Education will have their own share of expansion. The improvement of the emoluments of teachers may not fail to receive its due attention during the plan period.

Trips from Madras

J. M. LOBO PRABHU, I.C.S.,
Secretary to Government, Home Department.

VISITORS to Madras can have their fill of sight-seeing in Chingleput District, which surrounds the city. If the time available is limited only to four hours, the best trip is to Mahabalipuram, which is 33 miles, by Lattice Bridge road from Gandhi-nagar colony of Madras. The road passes mostly through flat country, broken here and there by water spreads and casuarina plantations. Occasionally on rising ground may be seen the 'megalithic tombs', made of rock boulders in which before the Vedic period, the rich left their dead. The only interesting village on the way is Tiruporur, which has a temple on the hill led up by a hundred steps, commanding the prospect of the country for miles, and of the sea and the Buckingham Canal, which runs like a thread by the coast. Mahabalipuram rises like a cascade of rocks as soon as the Buckingham Canal is crossed by the bridge on it. This town of Seven Pagodas is the oldest storehouse of art and history in the country. The relics are the survivals of the Pallava culture, in its principal sea-port town, from which took place, in the early centuries, the Indian emigration to South East Asia (now Siam, Cambodia, Malaya and Indonesia). Of the ancient town, there are no traces, but the work in rock, which has survived, gives some idea of the stature of the people.

Rathas

The visitor generally begins with the monoliths, five temples, called locally rathas carved out of the same rock standing like a family, which perhaps accounts for their being named after the five Pandava brothers. The highest and largest, carved from the top end of the rock, is the Dharmaraja ratha, which is in five tiers of finely wrought sculpture. The walls of the ground tier carry eight panels of which one, the combination of Siva and Parvathi in the same figure, exhibits perfect balancing of the masculine features and weapons with graceful female anatomical details and decorations. In the next tier, which can be reached by a ladder the legends of Siva, Vishnu and Krishna are portrayed in beautiful and warm settings including the delightful figure of a woman with a flower basket, which it is difficult not to touch. In the second monolith the Bhima ratha, the roof of which is shaped like the hood of a cart, the plastic wealth is less. The third is a replica of the first in which a frieze of geese and dwarfs makes one linger in thoughts of lyric quality. The fourth chariot, probably the most elegant, contains a representation of Durga resting on the severed heads of a demon buffalo. The panels of this ratha represent the most sensuous achievement of the whole group. Shiva, Vishnu and the Pallava rulers, who architected these monoliths are seen in their most human attitudes. The fifth is close to a monolithic elephant of great dimensions, which it resembles.

After the monoliths, the caves scattered in and round the hill on which the lighthouse stands, contain temples of various gods. The Varaha cave representing Vishnu in the boar incarnation gently raising Lakshmi, as earth from the ocean, has a deep as well as sensuous suggestion. The Mahishasura cave standing nearest to the lighthouse shows on one side the goddess, eight-armed, riding a lion after killing the buffalo-headed demon, and on the other Vishnu on the coils of a five-headed serpent lying in the beautific sleep of "Ananthasayanam". The second Varaha cave which has been obscured by a modern facade

On the opposite page—Shore Temple, Mahabalipuram.

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MADRAS

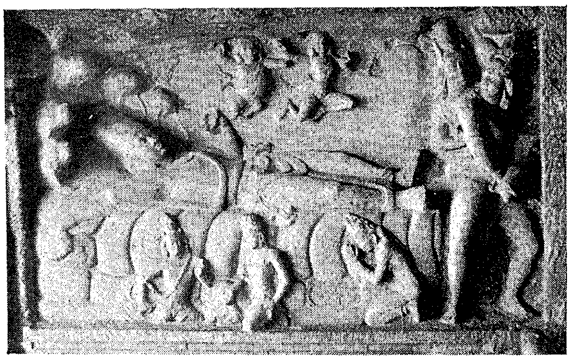
DETAIL OF THE PILLAR IN MANDAPA OF EKAMBARESWARA TEMPLE KANCHEEPURAM

contains the most delicate sculpture of all, to be seen unfortunately by such light as the pujari of the temple waves. In addition to Varaha there is an utterly sensuous carving of Lakshmi, as she is bathed by two elephants, while her hand-maids stand by. There are also two reliefs of the rulers with their two wives carved so finely that every line is alive and warm.

The third group is of scenes sculptured on large upright rock faces the outstanding ones being Krishna in a pastoral scene lifting mount Govardhan, while maids, delicately carved, look at him with affection, and Arjuna doing penance with multitudes of men, gods and animals in the same attitude sculptured over an area exceeding a thousand square feet. Nothing equal to the beauty of the Krishna picture or the wealth and realism of the Arjuna scene can be found anywhere on rock. The expression of the cow licking its calf when it is being milked in the Krishna sculpture and of the cat, which ignores mice as it is doing penance in the Arjuna sculpture, give some clue to the meticulous perfection of the artists' imagination and skill. Every one of the hundreds of faces sculptured has its own expression.

The Shore Temple

In the fourth group are temples, the most important being the Shore Temple, which is similar to the Pallava temple in Kancheepuram, and believed to be the last of the Seven Pagodas, the other six being under the sea, now to be seen as heaps of rock when the tide retreats. The temple makes a wonderful silhouette against the sea, its rocky masses piling up against the waves



Mahabalipuram—Anantasayanam

and the clouds. To the Pallavas leaving their shores for new lands, the temple probably held the last message from their home.

Mahabalipuram, in the two square miles on which it stands, is another world. The sculpture which survives is not only evidence of the skill and patience of the Pallavas, but of their sensuous and varied thought. Each of the sculptured figures has individuality of form and expression. The lines of the female figures are more exciting than anything even in modern sculpture. The stories rendered cover the greater part of the Vedas. If men did so much for their gods, what they did for themselves can be guessed, though nothing now remains of it. After Mahabalipuram one does not wish to see more.

If one has a whole day to be spent and is interested in temple architecture, the itinerary may be by the Grand Western Trunk road. On the twenty-fifth mile is Sriperumbudur, the birth place of Sri Ramanuja, the great apostle of the Vaishnavite revival. The Bashyakaraswami temple is within 50 yards of the main road. Facing it is the 100-pillared mandapam on which inset is the Avatharasthala, commemorating the birth spot of Ramanuja, with his image and those of his 95 disciples sculptured on the wall in a long and continuous frieze.

Kancheepuram Temples

Kancheepuram is 25 miles further away. It is considered as the second holiest city in India, reputed to possess 1,000 temples and 10,000 lingams. Approaching it by road from Madras for a long time one sees the skyline of temple gopurams. Nearer, the reflection of the Ekambaranathar Temple may be seen in the three-mile stretch of water banked by the road. This temple in Big Kancheepuram and the Varadharajaswami Temple in Little Kancheepuram are gigantic structures, erected by the Vijayanagar rulers, dedicated to Shiva and Vishnu respectively. The temple of Kamakshi, the goddess with eyes of love is the third of the important temples, at which the Great Shankara is reputed to have defeated Buddhist philosophers and re-established Hinduism.

The Siva Temple is staggering in its dimensions, the gopuram at the entrance rising 184 feet in

eight storeys, being the most massive and tallest of its kind. The holy of the holies lies deep in a many-pillared hall. It contains a huge lingam of mud of great antiquity, which has never been washed. Near it is a mango tree reputed to be a thousand years old, bearing four varieties of fruits and sheltering an exquisite sculpture of Siva and Parvathi in a pose of dalliance. In the arcade which measures about 600 feet 108 lingams are spaced along near the walls. The entire Hindu pantheon Subramania, Ganesh, Parvathi and Vishnu among others are commemorated in shrines of varied suggestion. There is also a giant lingam in which 1,008 lingams are inset. A mandapam of 1,000 pillars now in a state of disrepair, recalls the Colliseum at Rome. The gold-plated temple car and the various images taken in procession are housed in apartments of their own. Everything about the temple has the immense suggestion of the Vijayanagar Empire, with reminders here and there of earlier rulers. The legend of the temple is that, while Siva was performing the united offices of the Trinity, creating, preserving and destroying, his wife Parvathi, in a mood of levity, put her hands on his eyes as a result of which the whole world went dark. Siva punished her by exile to this temple.

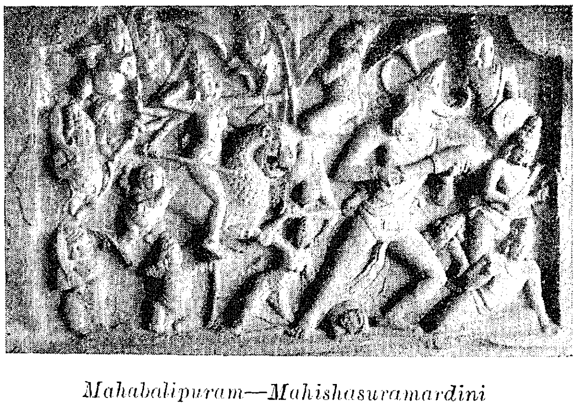
Hundred-Pillar Mandapam

The Varadarajaswami Temple also has majesty. Its origin is traced to the story of Saraswathi's revenge on Brahma, when he preferred Lakshmi to her. Surprising him, when he was performing horse sacrifice at this temple, she descended in a flood which could only be stopped when Vishnu, taking the form of a naked man, lay on the way. A full-length statue of a man, probably a Buddhist relic, in the dry bed of an arm of the Palar river, may account for this story. The most noteworthy features of the temple are its 100-pillar mandapam and its jewels. The pillars of the mandapam in the form of riders and horses in granite, each carrying a different legend of Vishnu, are probably the most imaginative and artistic plastic rendering in the South. From each of the four corners of the roof chains ten feet long carved out of the same rock reveal the unbelievable skill of masons of the Vijayanagar period. The jewels of the temple are gifts of Lord Clive and Collectors Place and Garrow, and of a Brahman, who took a vow that he would collect Rs. 10 each day till he made a total of Rs. 24,000.

The Kamakshi Temple is much smaller, but has traces of Buddhist origin. The shrine itself is gloomy, with a circular ring of stone, which is believed to have impounded the evil aspects of the goddess. It enjoys great popularity because of its capacity to give material benefits.

Much smaller, but historically and architecturally far superior are the two Pallava temples, Kailasanath for Siva and Vaikuntaperumal for Vishnu. About 1,400 years old, the temples have an atmosphere and appearance different from all temples except those at Mahabalipuram. At the entrance of Kailasanath Temple is Siva's bull, and eight shrines for the different Pallava rulers. The garbhagraha, holy of holies, contains a huge prismatic linga, with the sculpture of Somaskanda, with Siva and Parvathi behind. Other shrines contain frescoes of great vitality, which were originally painted. The walls of the Mahamandapa throughout their length carry sculptured reliefs of different legends of Siva with regularly placed niches, obviously for contemplative devotees. The Vaikuntaperumal Temple is on the same pattern, except that it is dedicated to Vishnu and its sculptured gallery contains the history of the Pallava rulers. The Vimana tower has three tiers, each with its shrine with an abundance of sculpture of the most imaginate and delicate workmanship.

The roads of the town, first aligned by the Pallavas, are broad, straight and probably the



Mahabalipuram—Mahishasuramardini

best in any town of its size in India. This may be due to the history of Kancheepuram, the seat of rulers for at least 1,400 years, the Pallavas, the Cholas and the rulers of Vijayanagar. The Muslims, the French and the British have also fought for the town, and the Ekambaranath temple contains evidence of the damage done by the cannon of Hyder Ali and the fire of the French. There is no other city in the South, where the tide of history and religion has left so many well-preserved relics and an atmoshphere redolent of past greatness.

After three hours at Kancheepuram the visitor can take the eastern road to Chingleput. On the way he passes the Hindu Religious Endowment School at Walajabad, a unique institution for 800 boys who lead a community life, which recalls the public schools of England. Six miles from Walajabad the visitor can see at Palayaseevaram a temple like that of Tiruporur, which stands in sky like an exhalation of human piety framed in imperishable stone.

Tirukalikundram

Chingleput Town from which the district derives its name is interesting only on account of its fort, which stands on a large artificial lake,* the Muslim rulers constructed not only for purposes of defence but for their pleasure. Beyond Chingleput the country becomes undulating with hillocks rising on all sides. This area is also under the Community Development Project and exhibits throughout houses which have been given a " new look." At Kulpanthandalam the visitor can see perhaps the most developed village in this State. If he stops at the community centre there will always be some one to take him round to show the development activities. Before reaching Kulpanthandalam the visitor however is likely to be attracted by Tirukalikundram the hill of sacred kites believed to have been fashioned out of the Vedas. It contains a temple on its rocky edge 500 feet high which is visited every morning by two kites said to come every day from Banaras. Though there are many temples on hill tops in the district none can rival the heaven-reaching aspect of this temple which can be seen for miles around. At Tirukalikundrm the visitor has an alternative of proceeding to Mahabalipuram or to Sadras which are both nine miles by road.

Sadras is interesting because of the Dutch Fort which is in ruins except the cemetry which is a protected monument. The beach at Sadras is clean and is perhaps the best for bathing on the Madras coast.

If the visitor has still another day to spare he can take the Grand Southern Trunk road at the seventh mile of which he passes St. Thomas, Mount with its Portuguese church on the most dominating hill built on the tomb of St. Thomas, the apostle of Christ, who is believed to have been martyred here. The Military Cantonment is neatly laid out, and neighbouring to it is the Meenambakkam Airport. Ten miles further is Tambaram, which has three important institutions, first the Tuberculosis Sanatorium believed to be the best in the country, second the Indian Air Force base and third the Christian College, which has been modelled on the University of Cambridge. One mile from Tambaram, near Vandalur, is the Automobile Factory producing Standard cars and Ferguson Tractors. Eighteen miles further is Chingleput. If the visitor is interested, he can visit the Leprosy Sanatorium two miles away at Tirumani, the premier institution of its kind in the country. During the cold weather the visitor can go to Vedanthangal, 20 miles from Chingleput, which is one of the two birds sanctuaries in the country. Literally hundreds of thousands of birds nest on the Barringtonian trees grown in the large waterspread. At certain times the leaves of the trees cannot be seen because of the number of birds on them.

The other picnic spots are, first the three lakes in the system which supplies water to Madras City. The first lake is Poondi, which is 37 miles from Madras by Tiruvallur road. The reservoir, enclosed by hills, formed by damming the Courtaliar river, has a waterspread of 12½ square miles. On one side of it is the Rest House, looking steeply down on the waters. The dam itself is more than 500 yards long. When the tank is full or when the waters are released, the visitor standing on the dam or on the constructions, which are two storey high, has almost the feeling that he is

on board a ship. Beyond the dam is a vast forest, attractive for hiking. The water from Poondi Reservoir is let to Cholavaram Tank, which i- only 13 miles from Madras but somehow is relatively unknown to the visitors. The Public Works Department Rest House is an ideal one, built at the very edge of the tank. The embankment, which is very high, provides a beautiful view of the water-spread and of the surrounding country-side. The third tank is the Red Hills Tank, which is ten miles from Madras and has a magnificent spread of water. The Corporation Rest House is always available to the visitor.

Ennore, nine miles away to the north of Madras, attracts the visitors because of its beach and inland waters on which boating is a cheap and easy pleasure.

Kambakkam Scenery

Kambakkam in the north about 47 miles away attracts visitors interested in natural scenery. When the visitor reaches the 38th mile on the Grand Northern Trunk road, he enteres a wooded area very sparsely populated. Kambakkam itself is reached by a Forest road. At the foot of the hill is the Cattle Salvage Farm, which boards cattle during their dry period. Ths Fisheries Department utilises the pools made by the hill streams. One pool contains such a clear water that its floor, 6 feet below, can be seen from above. It is popular with film companies for shooting rustic scenes. The top of Kambakkam Hill itself can be reached after an hour of steady climbing. It is worth doing so not only because of the hill remaining cool throughout the year but also because of the wonderful panorama it provides. Even if a visitor has to spend a week in Chingleput district, he can see something new and interesting every day. Kipling wrote of Madras

> " Clive kissed on her lips, her hair, her eyes,
> And she became queen among cities."

It could be said of Chingleput that history and nature have wooed her that she has the infinite beauty and interest of Venus rising from the sea.

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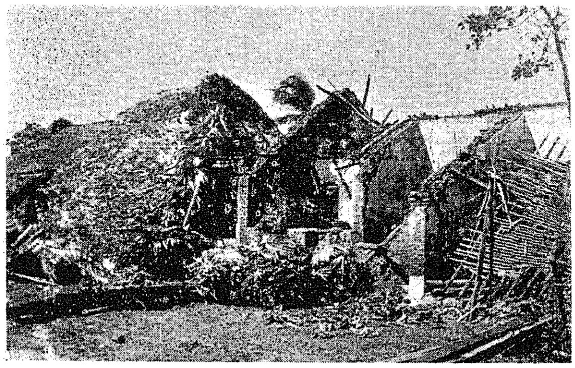
Cyclone and the Relief Measures

ON 30th December 1955, nature's fury struck the people of Tanjore, Tiruchirappalli, Madura and Ramanathapuram districts. A cyclone worst in people's memories swept across the four districts, causing immeasurable tragedy and wide-spread destruction to life and property. The sight was ghastly. Let figures speak.

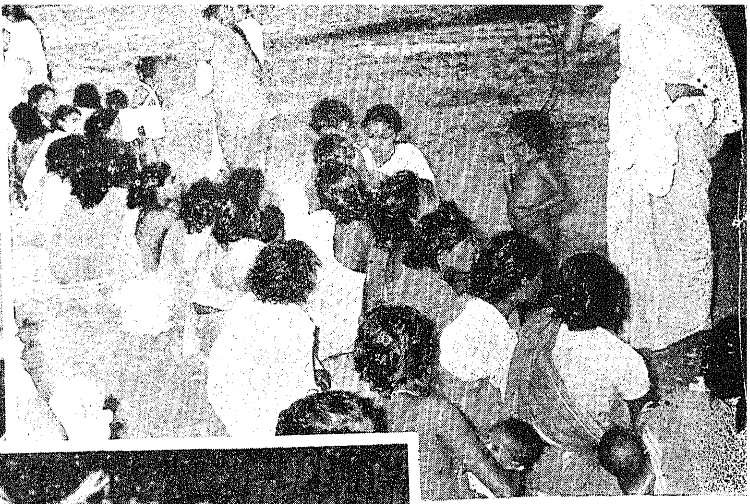
	Tiruchirappalli.	*Tanjore.*	*Madurai.*	*Ramanathapuram.*
Number of human lives lost ..	16	394	6	40 to 50
Mortality of cattle	5,054	73,357	1,500	40,000
Total acreage of crops totally lost, according to estimates of Agriculture Department.	5,228	20,000 paddy, 1,000 tobacco, 4 lakhs coconut trees.	1,000	125,000 acres approximately, i.e., 25 to 40 per cent of the total acreage under cultivation.
Number of buildings damaged : Houses.	29,650	162,205	Not correctly assessed but is expected to be a few hundreds.	75,000 in all.
Number of buildings damaged : Others.	3,754	160	Do.	....
Number of tanks breached :				
Public Works	31	368 in all.	100	257
Others	608	....	120	4,000
Number of supply channels and rivers breached.	1	17 and all rivers in Tiruthuraipundi taluk.	....	....

(Figures checked up to 12th December 1955.)

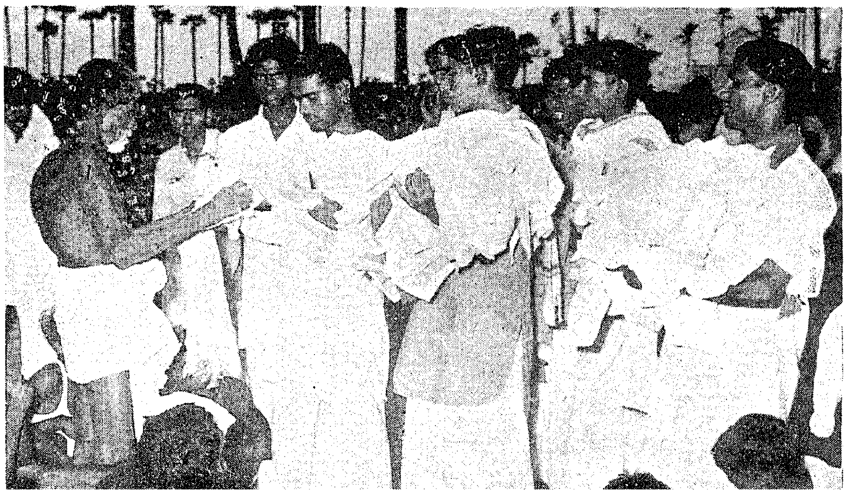
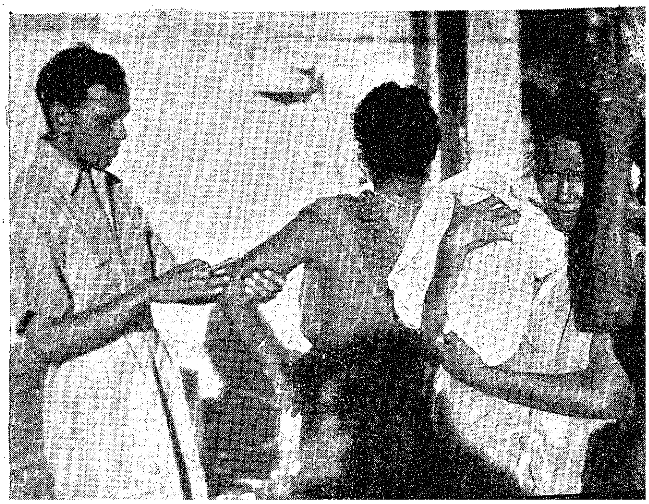


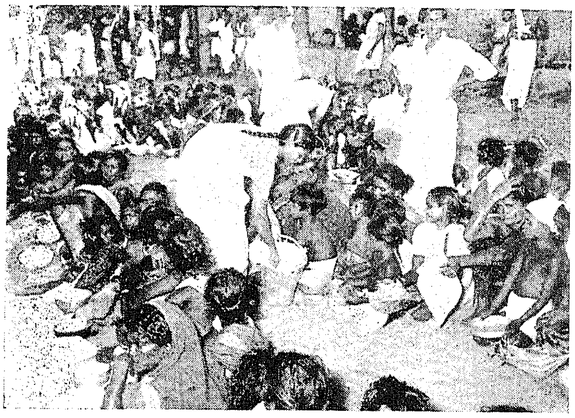
Cyclone Havoc—Damaged Huts at Pattukottai, Tanjore District

Cyclone Havoc—the Sole Survivor of a Family at Vedaranyam, Tanjore District



RELIEF WORK IN CYCLONE AREAS



Relief to Cyclone Victims at Vedaranyam, Tanjore District

As soon a reports were received, the Collectors of the districts were authorized to incur all expenditure in anticipation of sanction subject to the orders of the Board Members in their districts. The Chief Minister made an aerial survey of the areas on the 5th itself. The aerial survey revealed that large areas were completely isolated by floods.

Ramanathapuram Division as a whole needed food supply and arrangements were made to tranship 500 tons of rice on 6th by two steam launches from Tuticorin to Mandapam. Arrangements were also made for dropping of rice bags in the isolated areas in the districts by I.A.F. Aircraft. The air dropping of rice was commenced on 7th and was continued till communications were restored in the Ramanathapuram area.

In the meanwhile, the Prime Minister of India sent on 6th December a cheque for Rs. 50,000 which was followed up by another cheque for Rs. 1,00,000 on the same day on receiving an appeal from this Government for aid. The Governors of Orissa and Andhra contributed Rs. 1,000 and Rs. 500 respectively and the Government of Andhra sent Rs. 5,000 for relief work. An appeal was made to the Defence Ministry to send spare Army salvage clothings as most of the poorer section of the people lost their all and barely managed to escape from the fury of the cyclone with their lives. There was a magnificent response from the Defence Ministry in the shape of allotment of 375,000 articles of clothing. A similar appeal to the Ministry for Food and Agriculture resulted in an allotment of 2,000 tons of rice and 236 tons of jowar.

At the request of the Government, the Southern India Millowners' Association have promised a contribution of one lakh yards of cloth from its members. Eight thousand yards of these were collected almost immediately after the appeal was made and the balance is under collection. The Ramakrishna Mission has sent two teams of workers, one for the Vedaranyam area in Tanjore district and another in the Mandapam area in Ramanathapuram district. Other organizations also came forward with generous offers of help.

At a Sheriff's Meeting on 6th December 1955, the Madras Cyclone Relief Fund, 1955 was constituted with the Secretary to Government, Finance Department, as its Secretary and Treasurer. The Dinamani, a Tamil Daily, has started a relief fund and arrangements have been made for the proper co-ordination of the expenditure on relief work from out of these funds.

The Government have sanctioned the purchase of two tons of bleaching powder, 500 tons of cresol, and four lakhs of sulphaguanidine tablets for the four districts. Twenty-five lakhs of anti-cholera vaccine have been sent to the area. Fifty anti-cholera inoculation sets have also been sent there.

The Agricultural Department have sanctioned the supply of nets and ropes to fishermen at Adirampatnam and Arcothurai at a cost of Rs. 1,000 and ordered the Chief Conservator of Forests to despatch 10 wagons of bamboo to Tiruthuraipoondi area. The Director of Animal Husbandry has been instructed to despatch sera and vaccines to inoculate cattle and issue instructions to local officers for the disposal of dead cattle. The Assistant Collector, Nagapattinam, was directed to purchase and send 2,000 bags of rice and 100 tins of kerosene to Tondi, approach to which place by land was not possible till the 13th.

The Government have addressed the Ministry of Finance, Government of India, for exemption from income-tax of contributions made to the Madras Cyclone Relief Fund, 1955. They have also ordered the payment of an advance of two months pay to Government servants who have suffered material damage in the cyclone affected areas.

The Problem of Incentive in the Public Service

N. MURUGESA MUDALIAR,
Deputy Secretary to Government, Agriculture Department.

"THE Civil Service" wrote Sir William Beveridge, "is a profession and I should like it to become and realise itself as a learned profession." This realisation involves a good deal of study and experiment with technique and the relation of the largest volume of available experience to its specific problems. This article seeks to examine the place of incentive in the public service.

Incentive in the final analysis may be defined simply as the impulse of an individual or a group to do his or their best out of hope of gain or fear of loss. The problem of incentive in the Public Service is a difficult one unlike in other fields of work where profits are directly related to work. For example, in the case of a commercial agent who is paid wholly or partly on a commission basis, the commission earned may be a sufficient incentive to be a good salesman. In industrial employments, the incentive to perfection in skills is rewarded by higher grading and higher wages automatically. In the civil service, there is no doubt the motive for good work by way of increments, promotion and a retiring pension. But these rewards in most cases come as a matter of course that they are obtained with the minimum of good work. A further factor which kills incentive is occasional injustices in the matter of promotions or preferments which act as a damper on persons who rely mainly on good work instead of other exiguous circumstances. Promotions are also governed by rigid classification of services and compartmentalisation and not by capacity or merit.

The motive of gain is therefore not very strong for excellence in achievement. The fear motive is equally weak because unless one is thoroughly inefficient or demonstrably culpable, it is difficult to punish and degrade. The merely inefficient and indifferent individual therefore slips through and passes the muster at every stage without much impediment or trouble. The security of civil servants in the majority of the cases rests on custom and not on contract and the objective measurement of inefficiency is also well nigh impossible. It would be difficult to gauge outturn or assess quality of work even though the Chief officer is a discriminating individual who can distinguish good work from indifferent. He would also be unable to recommend good work for reward in concrete shape or in speedy time where it is recognized.

The drawbacks to incentive in public service are also routine and drudgery. Routine is inevitable in any large scale organisation. In all stages of the Service there is ample work of responsibility in addition to the usual quantity of routine and the latter cannot be regarded as something which could justifiably neutralise the zest for excellence.

What is it then that can be the most powerful incentive for honourable and distinguished work? Indisputably, it is the tradition of good work for its own sake—the mere force of habit that makes a man to do good work because he hates to do bad work. This tradition must be carefully developed so that a public servant may imbibe it from the very moment of his entrance into the service. He has to regard himself as one of the architects—no matter whether he holds a high or a low position in the hierarchy—whose work will directly reflect on the efficiency, usefulness and reputation of his department. The civil servant must be trained to get an intellectual and moral satisfaction of having done his duty thoroughly and well. He should also be made to realise that what he is doing daily will affect in some manner or other the

national weal adversely or beneficially, according to the attitude, the painstaking care, the thoroughness and sincerity he brings to bear on his daily tasks. This powerful force of tradition can be nfused by example and not merely by precept by seniors at all stages. The Curzonian prescription of severe rebuke and personal example for the shaping of junior officers has to be applied with sympathy and understanding. Praise and chastisement have an equally potent influence if judiciously applied. Very often the function of praise and appreciation as a factor for improvement and satisfaction is overlooked and more often it is believed that it is conducive to smoothness and good management if neither praise nor chastisement is employed. In any circumstance, unless there is *espirit de corps* and common sharing of pride in the work done, neither loyalty nor efficiency, nor incentive to good work is developed. The principle of *primus inter pares* if consciously followed also contributes to mutual confidence and homogenity of feeling and endeavour and avoid complexes.

In the hierarchial system in the Public Service, except in routine duties, there will be no clear definition of responsibility of individuals in the day's job. Each matter is put up from one grade of official to another and in the process the sense of responsibility tends to be lost and incentive is correspondingly weakened. A clear definition of duties and freedom for initiative and a reduction in the number of grades between the bottom and top ranks will enhance the scope for incentive o show up solid work and merit which should be spontaneously recognized and rewarded.

The Public Service at the present day calls for the greatest talents, industry, discipline and understanding in all ranks. The passion for perfection and the satisfaction of work well, dutifully and rev rently done without regard for material gains can be the most abiding incentive.

This idealistic attitude is fostered where the per onality of the individual is given due respect and given sympathetic scope for self-expression. The creative impulse is the most potent urge and more satisfying than any material incentive. If the public servant is to be used to the fullest advantage, it is spiritual necessity to ensure this not only for the satisfaction of the individual but also for a healthy and high-souled public administration.

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Fight Against Tuberculosis

Dr. T. S. ADISUBRAMANIAM,
Director of Public Health.

WHAT is Tuberculosis ?

Tuberculosis, popularly known as T.B., is a dangerous disease. Its usual target is the lungs, but it may attack bones, joints, intestines, glands and other parts of the body as well. Although it may kill in a few weeks or months, it usually kills only after some years of sickness.

What causes it ? Tuberculosis is caused by a germ Mycobacterium tuberculosis. Unlike some germs it is not easily destroyed by natural factors.

One always "catches" tuberculosis ; no one is born with it. The germs of tuberculosis come from a sick person usually through coughing, sneezing or spitting. A healthy person who may breathe the air contaminated by these germs, or who comes in close bodily contact with sick persons, as in, say, kissing or who uses such articles as plates, cups and glasses not properly sterilised after being used by persons with active disease, may catch tuberculosis.

No matter how careful one is, one cannot always keep the germs of tuberculosis out of reach of the body. For, one can never tell who has active disease and who has not.

How many have Tuberculosis ?

It is estimated that, in our country, there are 2,500,000 active cases of tuberculosis and 500,000 deaths occur every year from tuberculosis. Statistically speaking, deaths from tuberculosis occur at the rate of one a minute and for every death that occurs there are at least five persons with active disease left over in the society. For all we know this may be an underestimate. Yet the problem is colossal, as it is.

How does it occur ?

As the germs of tuberculosis get into the body, they try their best to take hold and cause an infection. A healthy body with its natural resistance at once puts up a fight to ward off the infection. The soldiers of the battle field, the body cells, surround the germs on all sides and take the germs as prisoners. They build a little prison, called "tubercle" and seal off the germs inside it. Thus the body resistance wins over the germs and healing of the lungs usually results. In a lifetime, one may be infected with the germs of tuberculosis over and over again, but the body resistance, if strong enough, can ward off the attacks successfully so that one does not become sick with tuberculosis. A person with a healed infection is not sick.

Situations arise when the body cells are unable to fight back successfully all the germs that have entered the body. Both parties keep fighting but neither of them is strong enough to score a victory. The seige is on and the result is uncertain.

Either as a result of breakdown of the defensive forces, that is, the breakdown of body resistance, or as a result of reinforcement of the offensive forces, that is, a fresh infection of the body, by tuberculosis germs, the fight ends in favour of the germs. The infection then results in disease.

The resistance of the body may break down due to many reasons. A recent illness of any kind always lowers body resistance. Lack of adequate relaxation, rest and sleep and lack of good and nourishing food are all important factors in the breakdown of natural resistance. Even such things as fear, anxiety, worry and other mental conditions bring about a lowered state of body resistance. The natural resistance thus lowered, the germs get the upper hand producing disease.

Why is it dangerous ?

Not only because of the reasons aforesaid or because tuberculosis is a "catching" disease but because it so often takes a course without letting off any noticeable warning, it is a dangerous disease. More frequently than not, tuberculosis develops to a fairly advanced stage before producing any clues or symptoms. When this happens, the sick person, not knowing that he is sick, has made others get sick and die from the germs he has been spreading.

The Signs

What are the signs of the disease ? "Dog-tired", "tired all the time" or growing tired easily for no apparent reason at all, are frequently warning signals of the beginning of tuberculosis.

Loss of appetite, loss of weight, and loss of energy may mean that the germs of tuberculosis are actively attacking.

A persistent cough, an incessant cold, night sweats, low grade fever especially in the evenings, pains in the chest, spitting of blood, etc., may indicate the presence of tuberculosis.

It does not necessarily mean that these symptoms always indicate that one has tuberculosis, but anyone of these symptoms is a sure enough danger signal to make one go to his doctor for a check up.

It also pays to remember that undiagnosed fevers that do not clear up immediately, painful swollen joints, enlarged glands in the neck, etc., may also be due to tuberculosis.

What to do to know ? Realising promptly that tuberculosis often begins without producing any noticeable symptoms, the only way of detecting the disease in its early stages is to visit a doctor, a tuberculosis clinic or a hospital for a complete medical examination.

Tuberculin Test

An allergic skin reaction test, known as "Tuberculin test" is helpful in ascertaining whether an individual has had any previous infection. The indication of this test is of indirect value only. It does not, however, make it known whether a person is having active tuberculosis.

Chest X-ray is a very important indicative means of early diagnosis of tuberculosis. All persons exposed to known cases of active tuberculosis and anyone who has reasons to question his health status by virtue of suffering from any of the early signs of the disease must have a chest X-ray taken. By reason of feeling perfectly strong and healthy, one should not postpone a medical check up and chest X-ray.

Can it be cured ? It is often asked by well meaning people whether tuberculosis can really be cured. The answer is a judicious "Yes". Many who have had the disease have been cured and returned to society as useful citizens. If one probes into the matter, one can find doctors, politicians, businessmen, cinema stars, labourers and agriculturists who once suffered from tuberculosis and are now doing fine.

Early Diagnosis

The crux of the matter, however, is early diagnosis and early treatment. One day postponed is one day nearer to the end. Grandmother's treatment, overnight cures, magic medicines, patent drugs and others cannot combat tuberculosis. Only a doctor can treat and treat well.

It is not always necessary to treat the patients in tuberculosis sanatoria. Depending on the nature and condition of the disease, the cases can be safely treated in tuberculosis clinics and in the homes of the patients themselves. Home-care of tuberculosis patients is fast becoming the routine, provided there are reasonable and adequate facilities for the isolation of the patient, individual care and attention and treatment.

What else has to be done ? The patient requires attention not only during treatment but for quite a while after treatment is over. He may not be really fit to take on his original job and do well. A proper job placement may be necessary for sometime to come until he is able to readjust himself physically. In some cases a totally different job placement may be necessary which means provision of special training during convalescence.

Besides the patient, there is the problem of his family. It is in the care of the patient and his family the medical social workers and voluntary organisations have a major role to play.

How can others be protected ?

By preventing tuberculosis from spreading, others can be protected. Knowing that tuberculosis is caused by germs that come from a sick person it is easy to understand that the sick person should be detected at once and treated promptly to eliminate him as a source of infection.

But remembering that tuberculosis often begins without any symptoms, it may be realised how difficult it is to recognise early stages of tuberculosis. If only there is a positive means of detecting tuberculosis, say by sight or by a symptom, enunciation of protective measures is possible, to a great extent. By and large this is almost an impossibility. The best one can do is to stay away from known patients of tuberculosis or watch out for people who cough and spit and undergo frequent check-up to make sure.

Such indirect measures as keeping in sound health, eating well and the right kind of food, living in well lighted and well ventilated homes and surroundings, getting comfortable relaxation, rest and enough sleep and avoiding frequent illnesses will certainly help to keep the natural resistance of the body in good trim to deal with any infection. But then to provide oneself with all these amenities a high standard of living should be obtainable to everyone.

What can be done about it ? In a country like ours where the socio-economic status is below standard we are driven to consider not only measures directed towards improvement in the living standard of the population in general but also some reliable alternatives to combat the problem of tuberculosis.

B.C.G.

One of the best alternatives so far known to medical science is B.C.G. vaccination. Of course, it does not afford complete protection against tuberculosis. But it is known, however, to afford the same kind of protection or immunity to the body as is afforded by natural infection by the germs of tuberculosis, but with this important difference that whereas a natural infection instead of bestowing immunity may produce virulent disease, B.C.G. vaccination does not. It has been scientifically proved that B.C.G. vaccination is harmless.

B.C.G. vaccination has been adopted as an important tuberculosis preventive programme in many parts of the globe. Over a 100 million persons have been so far vaccinated. In our own country this programme has been adopted and over 15 million persons have been successfully vaccinated. The programme continues.

It is worthwhile to quote Sir William Osler, who said about tuberculosis prevention programmes, " the battle against tuberculosis is not a doctor's affair ; it belongs to the entire public ". Five hundred thousand persons will die this year of tuberculosis and two and a half millions will have the disease. So it is obvious that everyone has to do a lot about protecting the nation in the fight against tuberculosis.

Summary

Tuberculosis is a 'catching' disease and is caused by a germ. So long as body resistance is good it is able to fight back the infection ; when it breaks down, disease occurs. Tuberculosis often begins without signs. Fatigue for no apparent reason, loss of weight and lack of energy, persistent cough or cold, evening temperature or night sweats may be danger signals. The best prospects for easy cure are early detection of the disease and prompt treatment. To live a healthy life, to stay away from known or suspected cases of tuberculosis and to undergo medical check-ups every now and then are sound preventive measures. In our country, the socio-economic standards of the population are below par and amenities are lacking. Realising that five lakhs of people die of tuberculosis and 25 lakhs suffer from active tuberculosis annually in our country, we have adopted B.C.G. vaccination as a preventive against tuberculosis, after careful consideration. The battle against tuberculosis belongs to the entire public.

Khadi Development in Madras under the Five-Year Plan

S. SWAMINATHAN,
Khadi Special Officer.

THE Khadi Schemes in operation in the State at the commencement of the first Five-Year Plan period consisted of two parts, viz., (i) the Intensive Khadi Scheme, and (ii) the Extensive Khadi Scheme.

The Intensive Khadi Scheme was formed in 1946. The immediate objective of the Scheme was to arrange for the production of khadi in each of the centres sufficient to make available to the local population supplies at the rate of 20 yards for an adult and 10 yards for a child per annum. In other words, the object was to intensify production of khadi in selected areas to make them self-sufficient in cloth. Seven centres were selected for the purpose in 1947. They were : (1) Avanashi, (2) Vellakoil, (3) Chinnasalem, (4) Payyanur, (5) Guruvareddipalem, (6) Kota Uratla and (7) Erragondapalem.

The extensive part of the scheme was designed to pave the way for the introduction of the Intensive Khadi Scheme. Under it, arrangements were made for supply of charkas at a concessional price and supply of cotton and instruments. It provided for the introduction of 1,000 charkas a year in each of the firkas in which the scheme was introduced. It was first introduced in 19 selected firkas in October 1949 and subsequently extended to 36 additional firkas in March 1951.

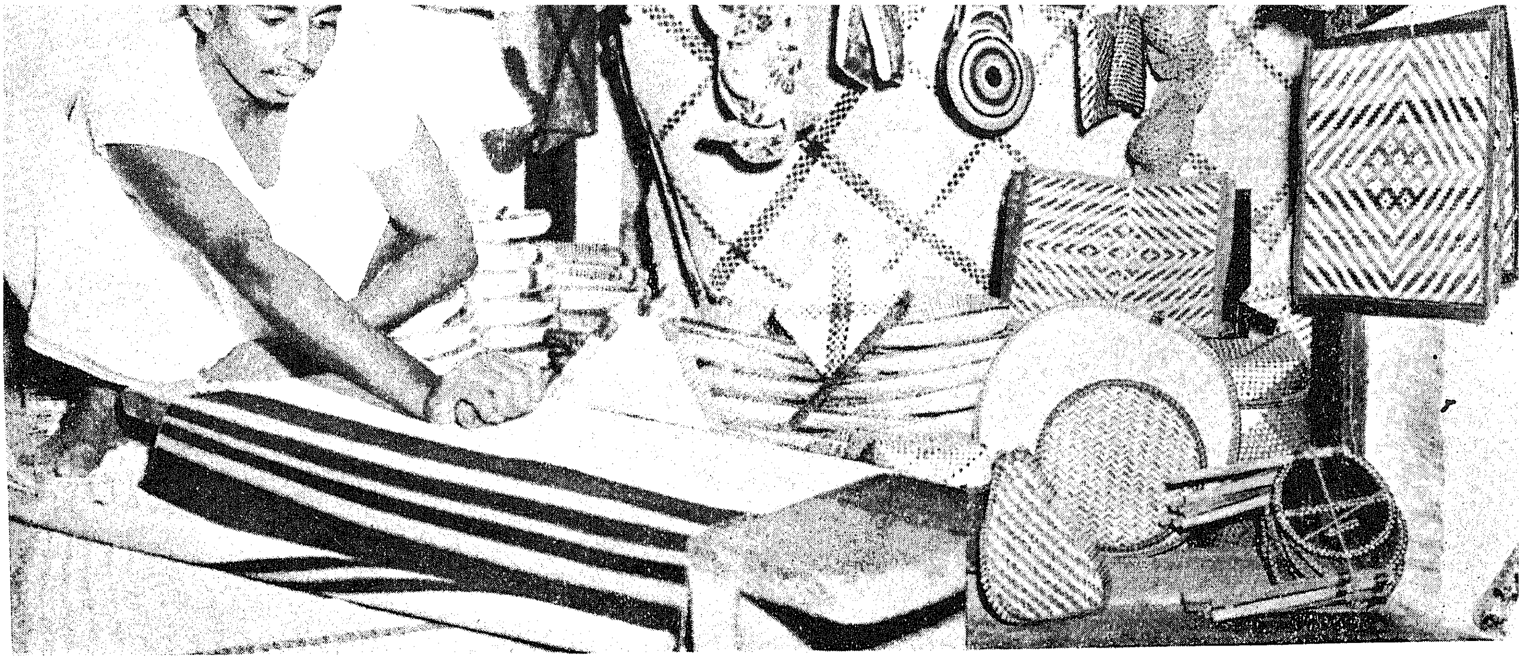
Under the scheme (comprising the Intensive and the Extensive parts), a total expenditure of 61·23 lakhs was incurred from the inception up to 31st March 1951. The receipts by sale of khadi, implements, etc., including the Government of India grant during this period amounted to Rs. 55·83 lakhs. The production of khadi in the seven Intensive Khadi Centres averaged 8·5 lakhs of yards per annum. The number of registered spinners was 33,600 by the end of March 1951. The number of weavers engaged was 1,250.

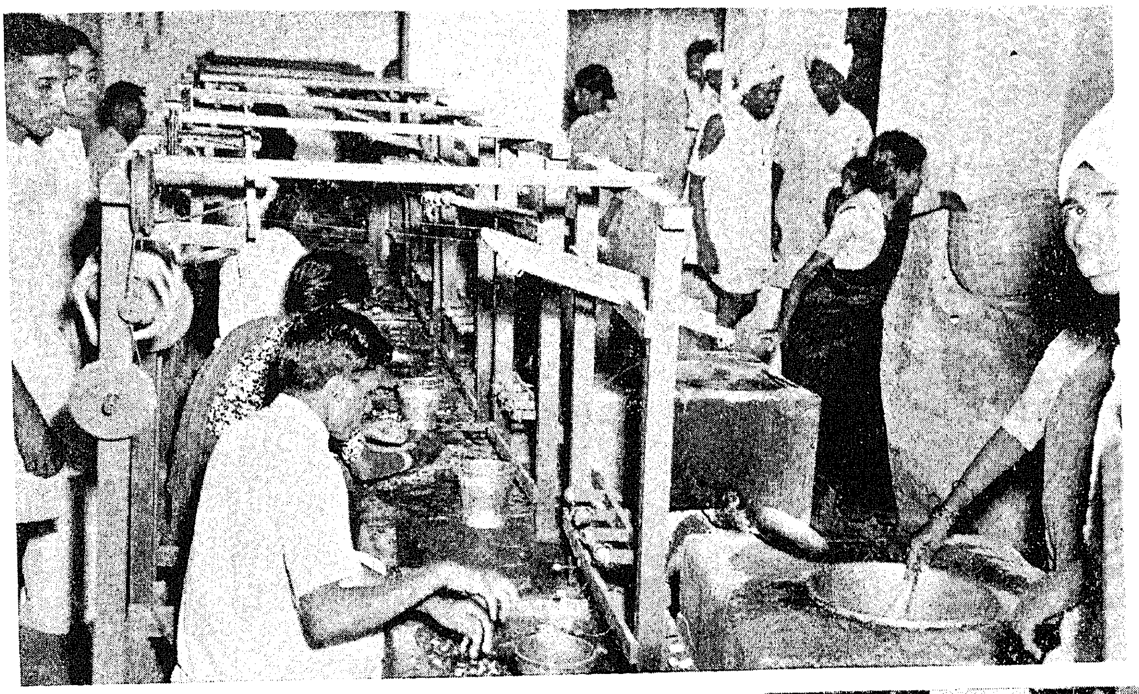
First Five-Year Plan

In framing the First Five-Year Plan for the khadi scheme, it was originally proposed to introduce the Intensive Khadi Scheme at least in one new centre each year. Subsequently, in its review of the draft two-year and five year plan of the Government of Madras, the Planning Commission observed that the scheme called for a fresh objective assessment on economic and other grounds. In view of this observation, the question whether any new centres should be started was considered and it was decided that the proposed five-year plan should provide only for the opening of one new Intensive Khadi Centre during 1951–52. In the other years, the Plan provided only for a normal expansion of the then existing centres with slightly increased expenditure from year to year. Similarly, the Extensive Khadi Scheme was proposed to be confined to the then existing 55 firkas.

The table in Appendix I shows the expenditure under the Plan frame as originally envisaged and the table in Appendix II shows the physical targets aimed at.

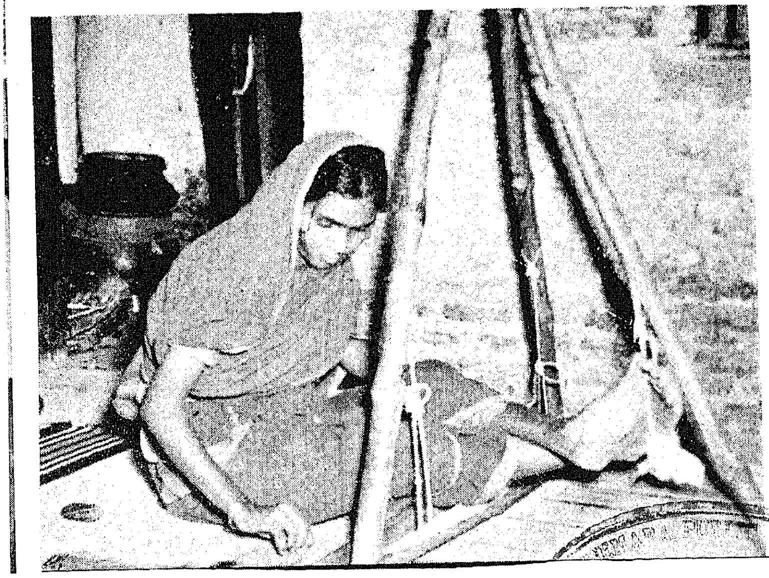
The separation of the Andhra State took place in the year 1953–54 and the figures in Appendices I and II were therefore split up into two parts relating to the Andhra State and the Residuary State. The figures of the two States are given on the next page.

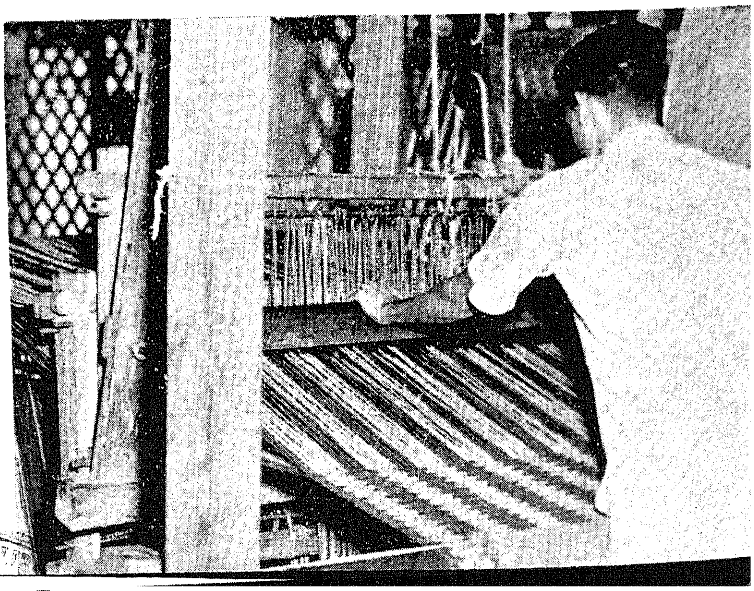




COTTAGE INDUSTRIES

In our agitational days, we were drawing inspiration from the thoughts of the glories of Ind of bygone days. Work, of course, is different from dreaming. But we have put our shoulders to the task!





(1) *Expenditure.*

	Net expenditure (in lakhs of rupees).		
	1951–52.	1952–53.	Total for the Plan period.
(1) Andhra State	1·01	1·13	6·90
(2) Residuary State	3·03	3·42	20·71

(2) *Physical Targets.*

	1951–52.	1952–53.	
Khadi Production (in lakhs of yards)—			
Andhra State	3	3·7	22·5 (total for 5 years.)
Residuary State	9	11·3	67·5 (do.)
Number of Spinners employed—			
Andhra State	10,000	12,500	20,000 (fifth year of the Plan).
Residuary State	30,000	37,500	60,000 (do.).
Number of Weavers employed—			
Andhra State	350	450	625 (fifth year of the Plan).
Residuary State	1,050	1,350	1,875 (do.).

The actuals achieved during the Plan period are given below :—

(i) *Receipts and expenditure (in lakhs of rupees).*

Year.	*Expenditure.*	*Receipts.*	*Net expenditure.*
1951–52	43·45	33·85	9·60
1952–53	39·35	29·80	9·55
1953–54	21·02	24·31	3·29
1954–55	30·84	24·21	6·63
1955–56 (up to end of September 1955).	27·55	18·84	8·71

Note.—The figures of net expenditure given above include also the value of khadi held in stock at the end of the year.

(ii) *Physical Targets.*

Item.	1951–52.	1952–53.	1953–54.	1954–55.	1955–56 *up to end of September* 1955.
Number of Spinners	40,000	49,403	49,644	49,086	59,000
Number of Weavers	1,400	1,785	1,658	1,469	1,685
Khadi production (in lakhs of yards).	12·00	21·82	6·65	8·85	7·71

Notwithstanding the fact that only one new Intensive Khadi Centre had been proposed to be opened during the Plan period, the following new centres were actually opened :—

Intensive Khadi Scheme.

Year.		*Name of new centre opened.*
1951–52	..	Koilkuntla and some additional sub-centres to existing centres.
1952–53	..	Narasapuram, T. Kallupatti.
1953–54	..	Simhadripuram.

Note.—Narasapuram and Simhadripuram Centres were opened as a famine relief measure.

1955–56	..	Kuruvikulam centre with three sub-centres.
		Rajapalayam independent sub-centre.
		Vedaranyam independent sub-centre.

At the end of the plan period, the following centres will be functioning in this State :—

(1) Avanashi, (2) Vellakoil, (3) Chinnasalem, (4) Payyanur, (5) Kallupatti, (6) Kuruvikulam, (7) Rajapalayam and (8) Vedaranyam.

Extensive Khadi Scheme

The scheme which was introduced in the selected firkas administered by Rural Welfare Officers in the first instance was extended to the National Extension Service blocks consequent on the merger of the Rural Welfare Scheme in the National Extension Service in October 1953. The working of the scheme has been entrusted to the Block Development Officers in charge of the National Extension Service blocks. At the end of the Plan period, the scheme will be in operation in the following National Extension Service blocks :—

Tirumangalam.	Baindur.
Musiri.	Taliparamba.
Tellicherry.	Coonoor.
Kangayam.	Rajapalayam.
Manjeshwar.	Peddanaickenpalayam.
Kallupatti.	Pudukottai.
Kurinjipadi.	Koilpatti.
Tiruppur.	Sirkali.
Chinnasalem.	Mayuram, East.
Payyanur.	Mayuram, West.
Polur.	Kumbakonam, South.
Uthukottai.	Kumbakonam, North.
Papanasam, South.	Kundadam.
Papanasam, North.	Nileshwar.
Kilvaithinankuppam.	Sigampunneri.
Valathi.	Kaveripattinam.
Sriperumbudur.	Vellayar.
	Vallianai at Thandari.

Comprehensive Khadi Scheme in the Community Projects and Community Development blocks

During 1955-56, the Government have introduced a comprehensive Khadi scheme on the lines of the Extensive Khadi Scheme in the Community Project and Community Development blocks. The general outline of the scheme is as follows :—

(i) Charkas will be introduced at the rate of 1,000 for every block in a year at subsidised rates ;

(ii) Cotton will be purchased and supplied at cost price ;

(iii) Yarn produced will be purchased by the Government from the spinners at the rate fixed under the Government Intensive Khadi Scheme from time to time and transferred to the nearest Intensive Khadi Centre ; and

(iv) ten carding machines and slivering sets will be supplied free of cost to each block.

The most important developments during the first Five-Year Plan period are—

(i) the formation of the All-India Khadi and Village Industries Board by the Government of India and the affiliation of the Government Khadi Scheme to that Board. Consequently, several concessions which are being shown by that Board to the khadi industry in the country have been made available to those engaged in khadi production under the Government Khadi schemes. The sale of Government khadi has been pushed up vigorously through the efforts of that Board and a fillip has been given to the production of khadi on a large scale. It must be mentioned here that the sales of khadi were so very discouraging in the middle of the Plan period that production had to be considerably slowed down. In that context, the advent of the All-India Khadi and Village Industries Board on the scene and the help rendered by it in pushing up sales and clearing the accumulated stocks were really a boon to the Government Khadi Scheme. If the outlook of the

Government Khadi schemes looks bright at the close of the First Five-Year Plan period, it is not a little due to the abovementioned factors ;

(ii) the extension of the National Extension Service and Community Development schemes over a large area of the State and the systematic introduction of the khadi scheme in that area. This is another factor which has contributed greatly to the propagation of the khadi ideal in the State ; and

(iii) the establishment of a Central Khadi Godown in Tiruppur, a Dyeing and Printing Unit in Tiruppur and the opening of seven Government Sales Depots at Tiruchirappalli, Coimbatore, Madras, Madurai, Kumbakonam, Mangalore and Cuddalore.

Second Five-Year Plan

Thus, it may be safely stated that at the commencement of the Second Five-Year Plan period, the Government Khadi schemes are about to enter a period of increased tempo in production and achievement. The plans for the Second Five-Year period have accordingly been framed on a fairly big scale consistently with the background of the industry's satisfactory development in the immediate past and also with the most important objective of the second plan, viz., the provision of sure employment on a large scale to the unemployed and the underemployed in the rural areas. Big as the plans already are from the points of view of improvements in quality and quantity, increase in expenditure and in production and the potentialities in terms of employment, it is quite likely that the beneficial results at present envisaged may be greatly multiplied and the industry itself revolutionized as a result of the introduction on a large scale of the Amber Charka, experiments on which are almost concluding satisfactorily. The Amber Charka is calculated to ensure a great improvement in the quality of the yarn and three-fold increase in the earning capacity of the spinner and the trebling of the rate of production of yarn.

The plans envisaged for the Second Five-Year period are :—

(i) Intensive Khadi Development Scheme ;

(ii) Intensive Khadi Development Scheme—Opening of a workshop for the manufacture of charkas ;

(iii) Intensive Khadi Development Scheme—Training, marketing, propaganda and publicity; and

(iv) Extensive Khadi Development Scheme. These are in addition to the current annual budget of about Rs. 70 lakhs per annum involved in the working of the existing centres, etc.

(i) *Intensive Khadi Development Scheme.*—Under this scheme, it is proposed to introduce six new centres with ten sub-centres each during the plan period as follows —

First year ..	1	centre	6	sub-centres.
Second year.	1	,,	12	,,
Third year ..	1	,,	14	,,
Fourth year.	1	,,	14	,,
Fifth year ..	1	,,	14	,,

(ii) *Intensive Khadi Development Scheme—Opening of workshops.*—It is proposed to open five workshops at the rate of one for each year with a view to facilitating the manufacture of a large number of charkas and other implements so as to meet the expected large demand as a result of the intensification of the Khadi production under the Second Five-Year Plan.

(iii) *Intensive Khadi Development Scheme—Training, Marketing, Propaganda and Publicity—Training.*—It is proposed to start one Khadi Vidyalaya to give training to 100 persons per year.

Research.—So far, no serious research work in khadi has been done in the State. It is, therefore, proposed to open a Research Institute manned by men with suitable qualifications with a view to doing research for the improvement of implements and technique so that there may be progressive improvement in the quality and quantity of production and also in the wage earning capacity of the spinners, weavers, etc.

Marketing.—It is proposed to open three regional emporia one in the third year, another in the fourth year, and the third in the fifth year of the Plan period.

Propaganda and Publicity.—It is proposed to open one Central Khadi Museum and Emporium and Employ Publicity Staff in the Second Year of the Plan period.

Dyeing and Printing Units.—It is proposed to start two dyeing and printing units during the Plan period.

Extensive Khadi Development Scheme.—It is proposed to introduce this in 225 centres in all during the Second Five-Year Plan period as follows.

First year	..	25 centres of 5 villages each.	
Second year	..	35	do.
Third year	..	45	do.
Fourth year	..	55	do.
Fifth year	..	65	do.

The scheme is intended for areas where khadi has not taken strong root already.

The estimated net expenditure on each of the four items in the proposed plan is given in Appendix III.

The physical targets in respect of each of the four items in the plan are given in Appendix IV.

APPENDIX I.

Statement of estimated expenditure during the First Five-Year Plan period.

Head.	1951–52.	1952–53.	*Two years' Total.*	1953–54 *to* 1955–56.	*Five Years' Total.*
(1)	(2)	(3)	(4)	(5)	(6)
	RS.	RS.	RS.	RS.	RS.
A. Intensive Khadi Scheme.					
Expenditure	20,22,000	18,83,700	39,05,700	68,58,600	1,07,64,300
Receipts	16,00,000	15,60,100	31,60,100	54,85,100	86,45,200
Net Expenditure	4,22,000	3,23,600	7,45,600	13,73,500	21,19,100
B. Extensive Khadi Scheme.					
Expenditure	2,37,800	2,75,000	5,12,800	10,00,000	15,12,800
Receipts	1,53,000	1,43,000	2,96,000	5,75,000	8,71,000
Net Expenditure	84,800	1,32,000	2,16,800	4,25,000	6,41,800
A. & B. Total ..	5,06,800	4,55,600	9,62,400	17,98,500	27,60,900

APPENDIX II.

Statement showing physical targets aimed at during the First Five-Year Plan period.

Item.	1951–52.	1952–53.	
Khadi production (in lakhs of yards)	12	15	90 (total for five years).
Number of spinners employed	40,000	50,000	80,000 (in the fifth year).
Number of weavers employed	1,400	1,800	2,500 (in the fifth year).

APPENDIX III.

Name of scheme.	1956–57.	1957–58.	1958–59.	1959–60.	1960–61.	*Plan,* 1956–61.
	Net expenditure in					
1 Intensive Khadi Development Scheme	0·93	2·67	4·60	6·49	8·38	23·07
2 Opening of workshop	3·08	3·08	3·08	3·08	3·08	15·40
3 Training, marketing, etc.	7·50	6·95	7·84	5·16	5·28	32·73
4 Extensive Khadi Development Scheme	2·42	5·50	9·42	14·19	40·85	72·38

APPENDIX IV.

Physical Targets.

		1956–57.	1957–58.	1958–59.	1956–60.	1960–61.	Plan, 1965–61.
1 *Intensive Khadi Development Scheme*—							
(*a*) Production of yarn (in lakhs of hanks)	..	100·80	133·20	190·80	273·60	381·60	1,080·00
(*b*) Production of khadi (in lakhs of yards)	..	19·16	25·64	37·16	53·72	75·32	211·08
(*c*) Weavers employed	..	1,100	1,300	1,500	1,700	2,000	..
(*d*) Spinners employed	..	44,800	54,400	65,600	76,800	88,000	..
2 *Opening of workshop*—							
Production of charkas (in thousands) ..	..	75	150	225	300	375	1,125
3 *Training.*—Number of persons to be trained	..	100	100	100	100	100	500
Research Institute—Opening of Institute ..	..	1	..	..	..	..	1
Marketing—Opening of Emporia	..	..	1	1	1	1	4* *3 Regional. 1. Central.
Dyeing and Printing Unit—Opening of Units	..	1	..	1	..	..	2.
4 *Extensive Khadi Scheme*—							
(*a*) Production of yarn (in lakhs of hanks)	..	28·10	67·50	118·15	180·00	472·50	866·25
(*b*) Production of khadi (in lakhs of yards)	..	5·62	13·50	23·63	36·00	94·50	173·25
(*c*) Weavers employed	..	400	960	1,680	2,560	3,600	..
(*d*) Spinners employed	..	12,500	30,000	52,500	80,000	112,500	..

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1 1956

Cottage Industries in Madras State

T. K. PALANIAPPAN, I.A.S.,
Director of Industries and Commerce.

THE vital role which Cottage Industries must play in the economic regeneration of our country cannot be overstressed. The importance of these industries not only from the point of view of solving the tremendous unemployment and underemployment problem facing the country but also from the necessity in the present context of concentrating on a form of economic activity that would by its very organizational set up and inherent distributive mechanism provide for the dispersal of purchasing power in as wide a circle as possible is being increasingly recognized.

Important Cottage Industries

The important Cottage Industries of the State are: Handloom cotton weaving, handloom silk weaving, hand spinning, cocoon rearing, silk realing, handloom wool weaving (including manufacture of woollen cumblies, rugs and druggets), hosiery, manufacture of cotton carpets, cotton and silk yarn dyeing, dyeing and printing of cloth, tanning of skins and hides, matches, oil pressing, palm and cane gur manufacture, ceramics including pottery and clay modelling, coir and coir goods, palmyra fibre and palm-leaf products, cane and bamboo work, metal ware including brass, aluminium and bell-metal, art metal work, mats including korai, palmyra and date, wood work, smithy, eucalyptus and sandalwood oil, manufacture of toys and dolls, glass bangles and beads, cigars, chewing tobacco, etc. The total number of workers engaged in these industries run into several lakhs and the value of the products turned out to several crores.

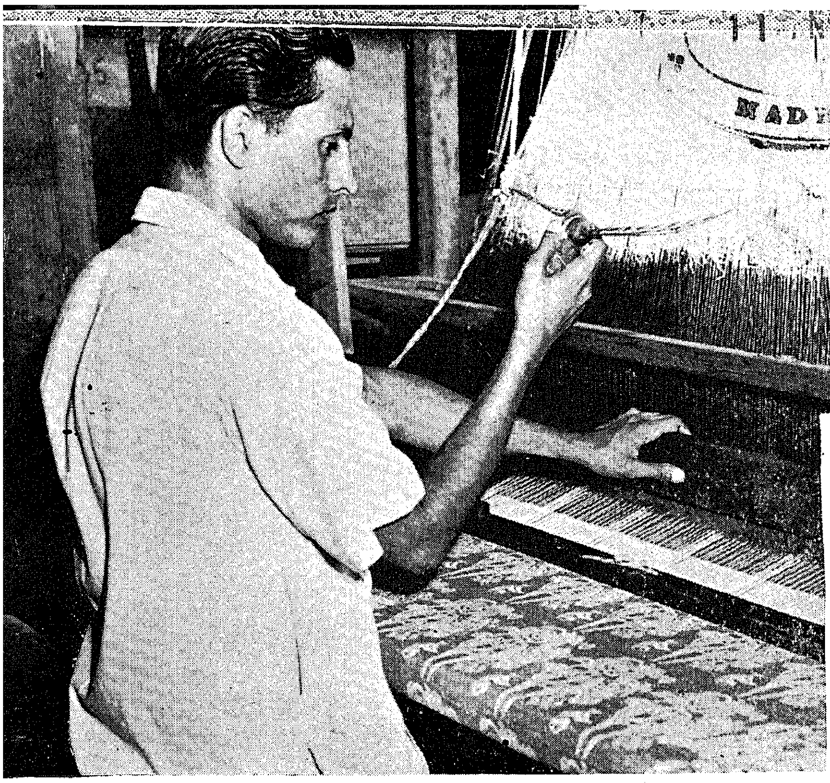
Different cottage industries and different aspects of cottage industries are now being dealt with in different departments. All work connected with the organization and working of industrial co-operatives is being handled in the Co-operative Department. The most important cottage industry dealt with by the Co-operative Department is handloom weaving. The Departments of Agriculture and Animal Husbandry are generally in charge of the work relating to the development of bee-keeping, sheep breeding, dairying, poultry farming, etc., and other allied industries. The promotion and development of cottage industries among women is one of the more important activities of the Women's Welfare Department. All other work relating to cottage industries is vested in the Department of Industries and Commerce with which rests the general responsibility for the development of industries in the State.

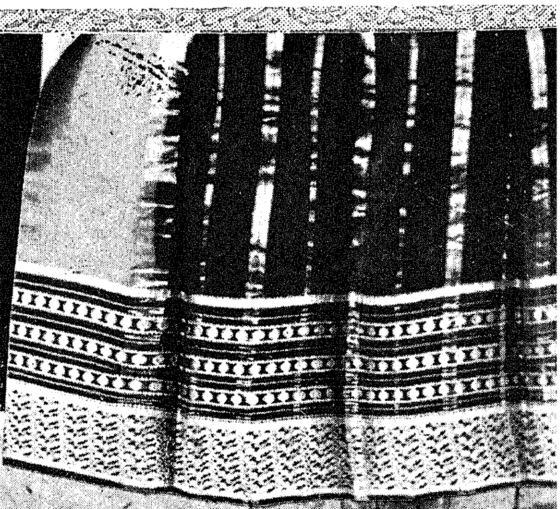
With a view to enlist the co-operation of all non-official elements interested in the development of cottage industries, a number of advisory boards and committees have been formed, charged with the task of an advising Government from time to time on the measures to be taken for the development of cottage industries in the State. The more important of such boards and committees are—

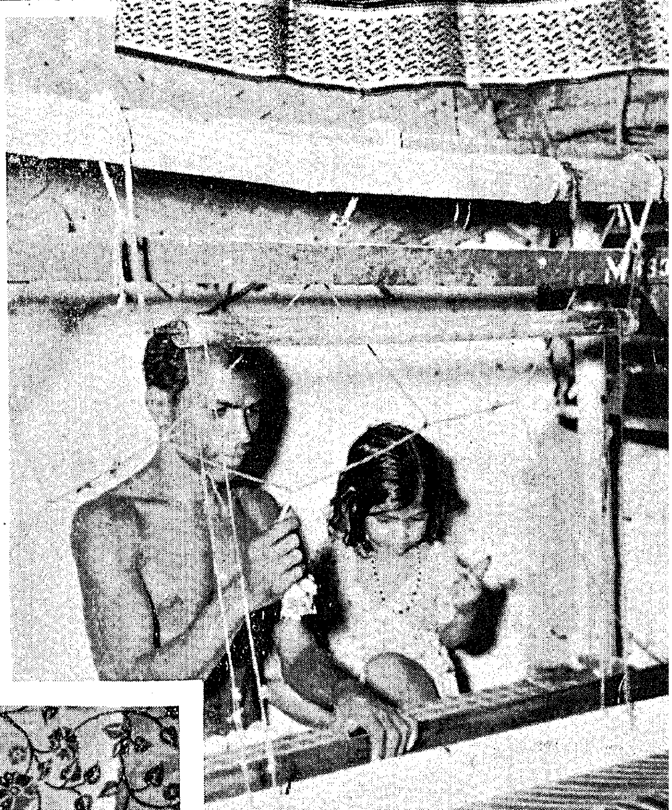
State Khadi and Village Industries Board: This State Board with the Minister for Rural Development as Chairman and the Director of Rural Welfare as Secretary is responsible for the development of khadi and village industries in the State.

State Handloom Committee: The Madras State Handloom Committee reconstituted in 1954 with the Director of Industries and Commerce as Chairman advises Government on all matters relating to the protection and development of the handloom industries in the State.

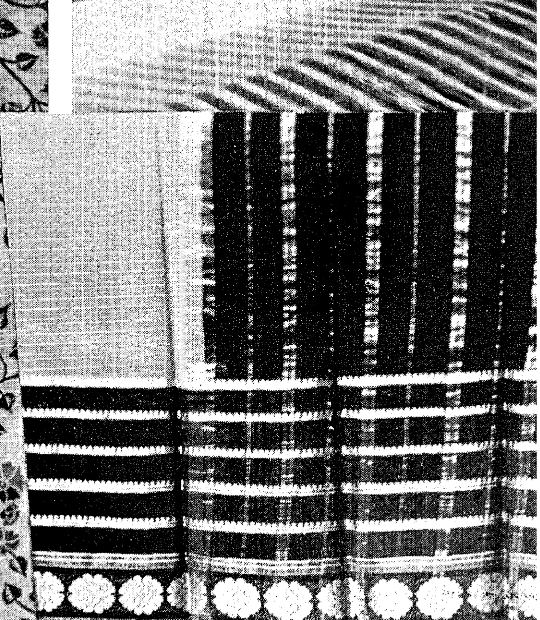
Regional Advisory Boards for Cottage Industries: Regional Boards for the development of

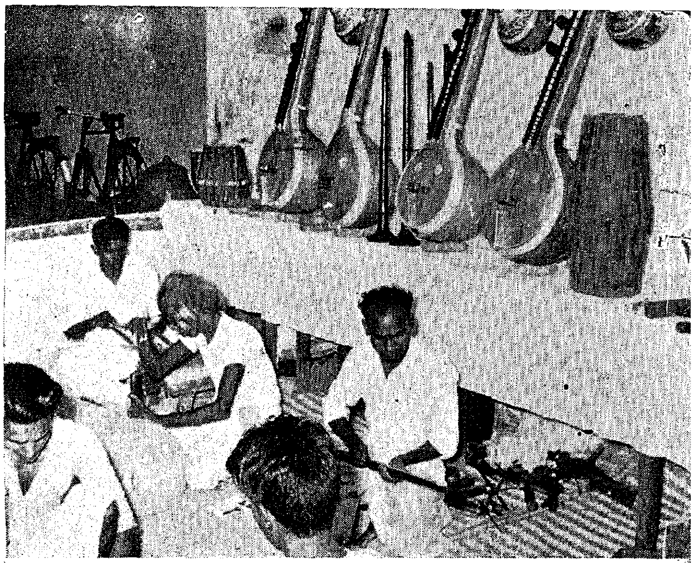




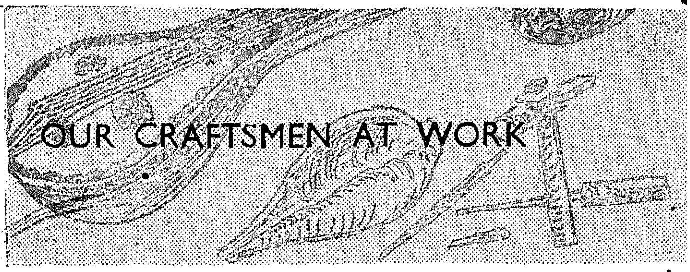


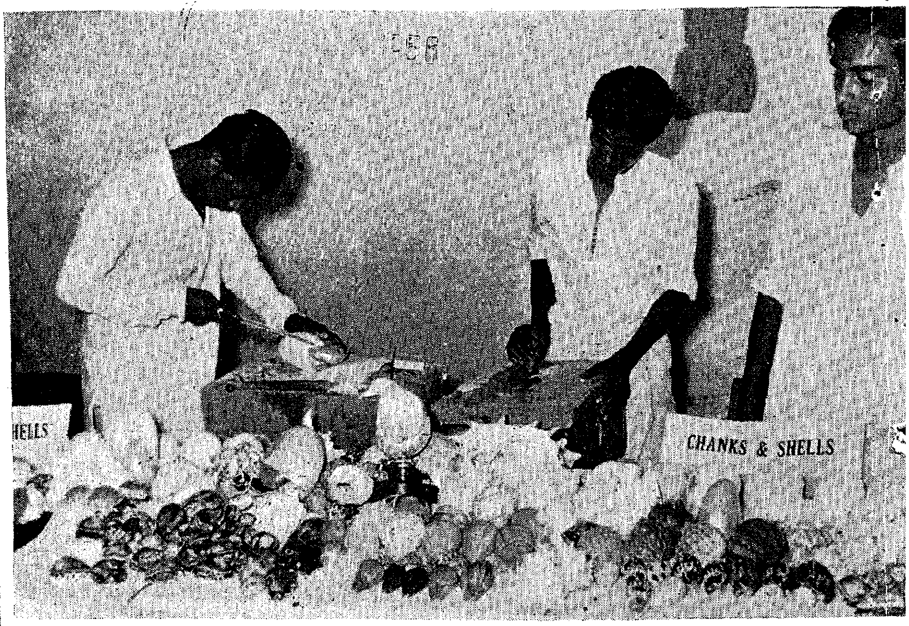
HANDLOOM, A PRECIOUS HERITAGE

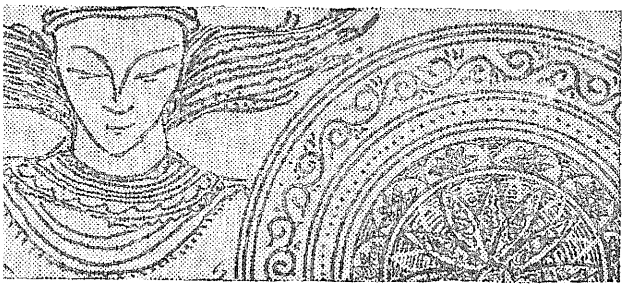


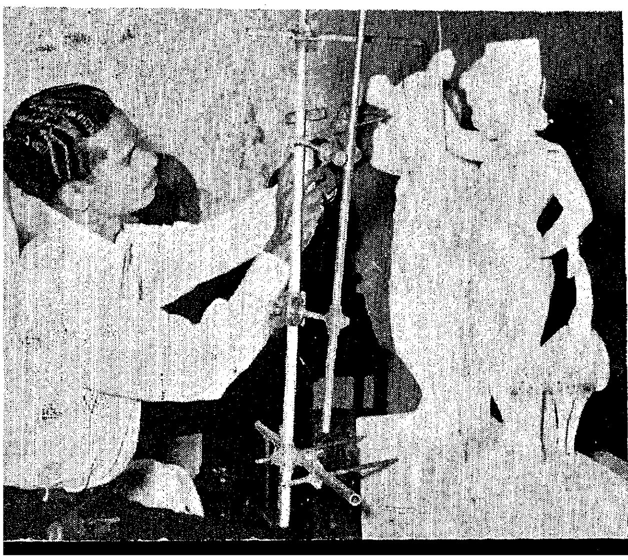


OUR CRAFTSMEN AT WORK









industries like matches, palmyrah-fibre and leaf products and leather goods manufacture which have developed from local tradition have been constituted with a view to stimulate intensive development of these industries in the regions where they are important and where there is scope for quick development.

The Director of Industries and Commerce, Madras, is the President of each of these regional Boards. A Technical expert of the department, the Local Deputy Registrar of Co-operative Societies and representatives of the industry constituted the members of the Board.

Joint Drugget Industry Advisory Board for Mysore and Madras: With a view to reviving the drugget industry which is one of the Dollar earning industries of this State and of Mysore, a Joint Drugget Industry Advisory Board has been constituted for Madras and Mysore. The Board is in general charge of the development of the drugget industry.

State Coir Advisory Board: The Madras Government have constituted a Coir Advisory Board with the Director of Industries and Commerce as Chairman and the Superintendent, Government Coir School, Beypore, as Secretary to advise them in regard to the development of coir industry in the State. Non-officials engaged in coir industry constitute the members of the Board.

Training and Research have always been considered the chief responsibility of the Department of Industries and Commerce in the campaign for development of cottage industries. Courses in theory and practice of various cottage industries and basic trades like smithy, carpentry, handloom weaving, bleaching, dyeing and printing, light metal casting, leather goods manufacture, coir, soaps, wood work, glass bangles and beeds, etc., are provided in the various industrial schools and institutes run by the Department. The period of training varies from five months to three years depending on the craft.

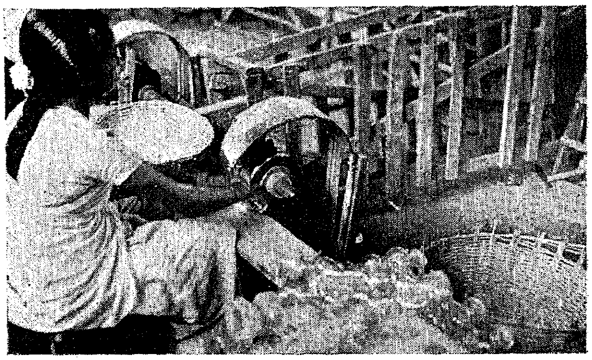
Research into the techniques, processes, appliances, etc., used in cottage industries has been undertaken in the Cottage Industries Research Institute of the Department of Industries and Commerce.

Financial Assistance

The financial resources of almost every cottage industry being slender and even too precarious, the need for financial assistance to the establishments engaged in cottage industries has long been realized in the State. Statutory provision has been made in this regard under the Madras State Aid to Industries Act. The Director of Industries and Commerce is empowered to grant a loan or subsidy not exceeding Rs. 500 to any cottage industrialist who desires to start or carry on any cottage industry which has an important bearing on the economic development of the country.

To promote the popularisation and speedy disposal of the products of the cottage industries, industrial and commercial museums were started during the period 1937–42 at several district headquarters, with a Central Industrial Museum in Madras. To ensure better functioning of the museums, a sales emporium was attached to each of them in 1947, where the sales of the products exhibited in the museums were organized. To facilitate better display and advertisement of products of cottage and small-scale industries and to bring the consumer in touch with production units, these museums were subsequently re-organized and regional museums were set up at Tiruchirappalli, Madurai, Coimbatore and Kozhikode.

The department has been paying special attention to the promotion and development of industries in rural areas. In order to revive and develop rural industries, particularly those which satisfy the basic needs of the villager, a



Glass chimneys

comprehensive scheme for the development of rural industries in the Firkas selected under the Firka Development Scheme was sanctioned in 1946. The primary object of the scheme was to train rapidly local workers in up-to-date methods of manufacture of articles of daily use. Under the above scheme, about 43 units were started and implements worth about Rs. 1·4 lakhs were purchased by Government. Three hundred and twenty-six artisans were trained of which 309 were given proficiency certificates. This was followed up in 1948 by another scheme which contemplated the starting of a number of production units by private agencies utilising the equipment and the services of the workers trained under the previous scheme. Twenty-two of the Demonstration-*cum*-Training units started under the 1946 scheme were transferred to private management for being run as production units. Rs. 12,418 worth of tools, equipment and raw materials were sold to the newly started production units and Rs. 6,301 worth of tools and raw materials were transferred free of cost to a few deserving agencies. These production units were confined to the development of basic industries, namely, blacksmithy, wood-work, sheet metal work, light metal casting, pottery, tanning and leather goods manufacture.

Revival of Indispensable Village Industries

The special committee appointed by the State Firka Development Board in 1947 pointed out that certain village industries like hand-pounding of rice, flour grinding, ghanny oil pressing which were indispensable for village economy were decaying and that it was necessary to undertake their immediate revival. A scheme designed to achieve this objective was sanctioned in 1950 and implemented in selected compact groups of fifty villages—one in each district. This scheme aimed at helping the villagers to produce their daily requirements for consumption in their own villages, thus making the villages self-sufficient economic units. It provided for a free distribution of improved labour saving tools and implements worth Rs. 5 lakhs in value to enterprising village artisans engaged in the village industries. It also provided for the supply to the artisans at cost price raw materials such as timber for carpentry, iron for smithy, oil seeds for the village ghani, etc., estimated at a total cost of Rs. 12 lakhs and envisaged the formation of multi-purpose co-operative societies in the villages for undertaking the procurement and distribution of raw materials to village artisans. Provision was also made for on the spot technical assistance and guidance through technical instructors under the general supervision and guidance of the District Industries Officers.

Rubber factory—Crepe rubber

In order to bring about an intensive development of industries in rural areas, the Government sanctioned in 1951 Sir M. Viswesvarayya's industrialisation scheme as an experimental measure in two districts of the State. The scheme aims at the development of industries in every part of the country with a view to increase production and income by encouraging the growth of the spirit of self-help, initiative and ambition in the rural population by offering them opportunity to acquire higher operative knowledge, skill and practice in industries. The special feature of the scheme is that it tries to achieve the objective of rapid industrialisation of rural areas through the agency and active participation of the peoples themselves at every stage from planning to execution.

In the residuary Madras State the scheme was tried in Musiri taluk of Tiruchirappalli district. Nearly fifty different industries were taken up for development in this area. The results obtained so far are, on the whole, encouraging and it is proposed to extend the scheme to additional areas.

Proposals under Second Five-Year Plan

An intensive development of cottage industries throughout the State is envisaged in the Second Five-Year Plan. Numerous schemes have been

proposed under this Plan for the development of village industries like bee-keeping, pottery, oil pressing, manufacture of Khandsari sugar, cotton ginning, groundnut decorticating, hand-pounding of rice, etc. One hundred small units for making matches and twenty production-*cum*-training units for the manufacture of fish-nets, etc., are proposed to be started in the coastal and other backward areas of the State to provide subsidiary employment to fishermen, Harijans, etc. Twenty-six demonstration-*cum*-training centres for the development of village tanning and leather goods manufacture and allied industries like preparation of bone-meal, etc., are proposed to be set up throughout the State. These units will demonstrate the proper utilization of carcases of animals, improved methods of tanning and of leather goods manufacture and preparation of bone-meal, etc., and train villagers in each of these industries. The staff will also visit the workers in their homes and assist them in improving the quality of the articles produced by them. Coir, which is one of the important cottage industries of the State, is proposed to be developed intensively throughout the State on co-operative lines. Provision has been made for the manufacture of Ambar Charkas (which was originally designed in this State) and for supplying them on hire-purchase basis to spinners with a view to providing employment to a large number of people. Provision has also been made for the supply, on the hire-purchase system, at subsidized rates of other improved tools and equipment such as reeling machines for silk, improved potters' wheel, etc. Village artisans will also be given assistance by way of supply of raw materials at cost price, free assignment of lands and grants for the putting up of work-sheds or for the conversion of part of their houses into workshops. As the success of all the steps taken for the development of cottage industries will depend mainly on the arrangements made for marketing the finished products, an efficient marketing organisation is proposed to be set up for the purpose. Besides carrying out market analysis and research and advising cottage workers on market trends and facilities, steps will be taken to ensure that, as far as possible, production is organised against assured orders.

Certain handicrafts such as art metal work, sculpture, mat-weaving, pith work, etc., which are now being practised at specialized centres, have won all-India renown and it is proposed to open training or servicing centres for these handicrafts with a view to giving the artisans training in improved methods so as to improve quality and reduce costs, supplying raw materials at reasonable prices, introducing new and attractive designs, undertaking certain processes of manufacture which the individual artisan will not be able to do efficiently at his workshop, provision of facilities for fine finishing and so on. The main difficulty now experienced in marketing the products is proposed to be met by creating a network of handicrafts emporia throughout the State and in major cities of India, with mobile vans attached, which will purchase the finished goods in the villages and producing centres and arrange to market them at important tourist and pilgrim centres.

Junadi work on saris

Tuticorin Pearl Fisheries

V. JOHN.
Deputy Director of Fisheries.

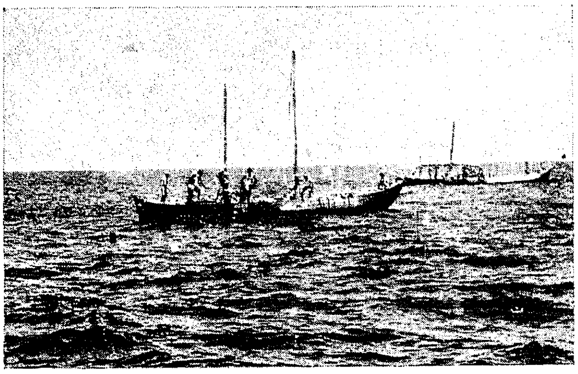
PEARL fisheries and Chank fisheries have been sources of revenue to the Tamilnad for ages. In the absence of any recorded history it is not possible to say when these 'industries' began to be operated. In the very early days when Pandyas ruled South India they were reported to have been trading in pearls. The Greeks, Egyptians, Moors, Arabs and Venetians have referred to the pearl fisheries in the Gulf of Mannar as among the notable sights seen during their travels. It was Marco Polo who recorded the first description of diving for pearl oysters in the Gulf of Mannar.

First After Independence

The Portuguese had the control over the pearl banks off the coast of Tinnevelly district from the 16th to the middle of the 17th century, the Dutch from the 17th to the end of 18th century and thereafter the British took possession of them. Under the British there have been 16 fisheries, the last being in 1926–28. This year's fishery after a lapse of 27 years is the first one conducted after India attained independence. The irregular nature of the pearl fishery in the Gulf of Mannar has been the subject of research for over two decades but so far no satisfactory explanation has been found though it has been established that the physical and chemical changes in water ocean currents and the presence of certain predatory fishes which are enemies to the oysters contribute to the irregular cyclic character of the fishery. Though the potential pearl banks extend from Cape Comorin to Rameswaram coast, the banks which bear sufficient oysters to conduct a good fishery lie off Tuticorin at a distance of 8 to 15 miles from the coast. These banks are patches of hard stony bottom formed mostly by the consolidation of sand and organic remains with dead coral and shell deposits. The pearl oysters generally attach themselves to these hard objects and when crowded they adhere to one another. The average life of an Indian pearl oyster has been ascertained to be 5-6 years by the experiments conducted in the pearl farm at Krusadai Island. Experience has shown that the best period to fish the oysters is when they are between 3½ to 5 years of age. If they are not lifted within 5 years, they are likely to die away.

Origin of Pearls

As to the origin of the pearl many fantastic theories are found in the literature of different countries. The usual legend or popular belief has been that at certain seasons of the year the pearl oysters rise to the surface of the sea in the morning, open their shells and imbibe the dew drops, these aided by the breath of the air and warmth of the sunlight are in course of time transformed into lustrous pearls. The well-informed know that this is impossible as the pearl oysters are sedentary animals.



Pearl diving—Tuticorin

The latest and most accepted theory is that pearls originate in pathological secretions either by the intrusion of some irritating foreign matter or by the covering of ova or internal organisms or due to the deposite of concentric layers of nacre on cyst containing parasitic worms within the soft tissues of the mollusc. Thus it is interesting to know that this precious gem is born out of the pain of the poor animals. Pearl is the queen among gems that give joy to man. Unlike other gems the pearl comes to us perfect and polished, direct from nature. It neither needs nor admits of any improvement by man. Its perfection and purity, its soft gleam, its chaste and subdued beauty and its quiet dignity have fascinated and will continue to fascinate mankind for all times. Its magical charm has fascinated the uncivilised as well as the ultra-modern both in the east and the west, and it is sought after and adorned by the Prince and the commoner. Women of rank and refinement, and wealth and beauty prize them more than the dazzling diamonds.

Sources

The sources of pearls are fairly widely distributed throughout the world, but the places where profitable fisheries occur are limited. In point of production and value and probably of antiquity also the fisheries of Persian Gulf and Gulf of Mannar stand pre-eminent. According to London's Hatton Garden, the world centre of the pearl market, the pearls coming from the Gulf of Mannar are equal in quality to those coming from any other part of the world. Cleopatra's pearls were probably born in the Gulf of Mannar.

Pearl Oysters

The pearl banks in the Gulf of Mannar are being inspected every year by the Fisheries' Department to find out the prospect of a pearl fishery. In the course of such an inspection a heavy spat fall was detected in 1949 and the development of the oysters was carefully watched. During the inspection carried out at the beginning of 1955 it was estimated that the pearl banks off Tuticorin contained about 271 lakhs of oysters of which nearly 2 crores were in the famous Tholayiram par which has been the homeland of innumerable valuable pearl oysters from time immemorial. The test conducted by the department showed that oysters were fairly rich in pearl content, and that the pearls were of good quality and value. Therefore the Government decided to hold a pearl fishery in March-April 1955. Accordingly notice of it was given in all prominent dailies in and outside the State and speedy arrangements were made to put up a pearl fishery camp in Siluvathurai, two miles north of Tuticorin, where successive pearl fisheries had been conducted in the past.

The 1955 Operation

A small pearl town with all modern amenities such as electricity, water supply, sanitary arrangements, canteen, post office, medical and public health units, police force and sheds for officials, divers, merchants, etc., and pearl bazaar, shops, kottus, thotties, etc., sprang up in the course of a fortnight. The 1955 Pearl Fishery was inaugurated by Sri M. Bhaktavasalam, Minister for Agriculture, Fisheries and Industries at 7-15 a.m. on the 19th of March in a beautifully decorated pandal in the Siluvathurai Pearl Fishery camp, in the presence of a large gathering of a variety of people, traders, businessmen, ordinary citizens, distinguished persons, and Government officers.

The regular routine of the operations was the same as followed in the previous fisheries and may be described as follows: A signal gun was fired from the office premises at 3 a.m. every day to remind the divers residing in the office compound and in the town that it was time to start to the pearl banks. At the same time a bell was rung from the camp by the Beachmaster to wake up the divers there. By special arrangements buses

were run during this fishery, from the town early morning to enable the divers to reach the camp site where their canoes were left.

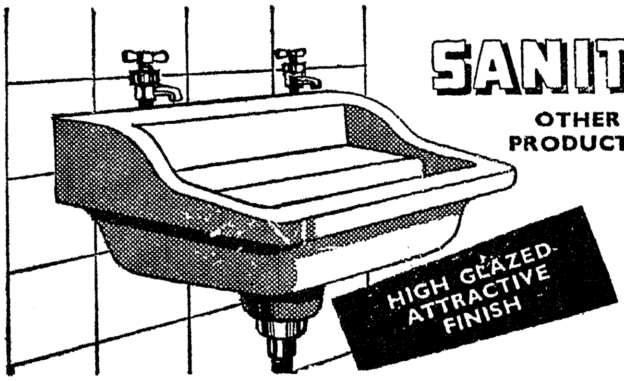
Diving Operations

In spite of all these facilities provided the divers used to leave only by sunrise. By sunrise the divers, about 600–700 in number, were on their way to the pearl bank in their fleet of canoes (vallams) 60–70 in number, towed by the departmental motor vessels " Gouher Khaleeli ", " Tuticorin " and " Calicut ". The smaller vessels " Sea Scout " and " Leverett " accompanied them to the banks to patrol the area, to see that the divers fished only in the area marked for the day's fishing. When the fleet reached the marked area the vallams were let loose and they distributed themselves in the area. The diving operations started usually between 9 and 10 a.m. The signal to commence diving was given by blowing the fog horn from the large vessel " Gouher Khaleeli." Thereupon the divers said their prayers and started diving from both sides of their canoes. As soon as each diver reached the bottom he collected as many oysters as he could, while holding his breath, put them in the bag tied round his waist, and then came up and emptied his catch into the canoe. He took rest for about 5 minutes and then went down again. This process went on, all over the marked area for about 3–4 hours till a signal was given from " Gouher Khaleeli " to stop the operations. The vallams then returned to the parent vessels for dividing their catches. One-third of the day's catch was given to each diver in a sealed bag as his share, and the divers were allowed to go ashore, after searching them and their vallams for hidden oysters or pearls. The vallams were given a tow back to the shore if the wind was not favourable.

Net Revenue Realized

At the pearl fishery camp the divers sold their oysters in retail to the large crowd eagerly waiting to purchase oysters and try their luck. On the first day the oysters fetched from Re. 1 to Rs. 4 each, and later on the prices came down to one anna and nine pies per oyster. The Government share of oysters bagged in gunny bags at 1,000 each were auctioned by the Deputy Director of Fisheries (Marine) every night between 8 and 11 p.m. A variety of businessmen, traders, pearl merchants and ordinary citizens took them in auction. The bid ranged from Rs. 35 to Rs. 120 per bag of 1,000 oysters. Those who took large numbers usually extracted the pearls by allowing the oysters to rot in tubs kept in the thotties, and washing out the decayed matter. Pearls costing a few hundreds of rupees were common and a few pearls costing Rs. 2,000 and more were also obtained. As a result of the fishery this State realized a net revenue of nearly a lakh of rupees. About an equal amount was earned by the 600–700 divers who took part in the fishery of 44 days, the average earning per diver per day having been about Rs. 5.

It is worth mentioning that thanks to the excellent arrangements made by the various departments that took part in the fishery no untoward incidents happened during the fishery. In all previous pearl fisheries outbreak of cholera was a usual occurrence.



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